

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022
or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Transition Period From _____ to _____
Commission File Number: 001-33664

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Charter Communications, Inc.

(Exact name of registrant as specified in its charter)

Delaware	84-1496755
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
400 Washington Blvd.	Stamford Connecticut 06902
(Address of Principal Executive Offices)	(Zip Code)

(203) 905-7801

(Registrant's telephone number, including area code)

Securities registered pursuant to section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A Common Stock \$.001 Par Value	CHTR	NASDAQ Global Select Market

Securities registered pursuant to section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.:

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the registrant of outstanding Class A common stock held by non-affiliates of the registrant at June 30, 2022 was approximately \$50.8 billion, computed based on the closing sale price as quoted on the NASDAQ Global Select Market on that date. For purposes of this calculation only, directors, executive officers and the principal controlling shareholders or entities controlled by such controlling shareholders of the registrant are deemed to be affiliates of the registrant.

There were 152,651,396 shares of Class A common stock outstanding as of December 31, 2022. There was 1 share of Class B common stock outstanding as of the same date.

Documents Incorporated By Reference

Information required by Part III is incorporated by reference from Registrant's proxy statement or an amendment to this Annual Report on Form 10-K to be filed no later than 120 days after the end of the Registrant's fiscal year ended December 31, 2022.

CHARTER COMMUNICATIONS, INC.
FORM 10-K — FOR THE YEAR ENDED DECEMBER 31, 2022

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This annual report on Form 10-K is for the year ended December 31, 2022. The United States Securities and Exchange Commission ("SEC") allows us to "incorporate by reference" information that we file with the SEC, which means that we can disclose important information to you by referring you directly to those documents. Information incorporated by reference is considered to be part of this annual report. In addition, information that we file with the SEC in the future will automatically update and supersede information contained in this annual report. In this annual report, "Charter," "we," "us" and "our" refer to Charter Communications, Inc. and its subsidiaries.

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS:

This annual report includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, regarding, among other things, our plans, strategies and prospects, both business and financial including, without limitation, the forward-looking statements set forth in Part I. Item 1. under the heading “Business” and in Part II. Item 7. under the heading “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this annual report. Although we believe that our plans, intentions and expectations reflected in or suggested by these forward-looking statements are reasonable, we cannot assure you that we will achieve or realize these plans, intentions or expectations. Forward-looking statements are inherently subject to risks, uncertainties and assumptions, including, without limitation, the factors described in Part I. Item 1A. under “Risk Factors” and in Part II. Item 7. under the heading, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in this annual report. Many of the forward-looking statements contained in this annual report may be identified by the use of forward-looking words such as “believe,” “expect,” “anticipate,” “should,” “planned,” “will,” “may,” “intend,” “estimated,” “aim,” “on track,” “target,” “opportunity,” “tentative,” “positioning,” “designed,” “create,” “predict,” “project,” “initiatives,” “seek,” “would,” “could,” “continue,” “ongoing,” “upside,” “increases,” “grow,” “focused on” and “potential,” among others. Important factors that could cause actual results to differ materially from the forward-looking statements we make in this annual report are set forth in this annual report and in other reports or documents that we file from time to time with the SEC, and include, but are not limited to:

- our ability to sustain and grow revenues and cash flow from operations by offering Internet, video, voice, mobile, advertising and other services to residential and commercial customers, to adequately meet the customer experience demands in our service areas and to maintain and grow our customer base, particularly in the face of increasingly aggressive competition, the need for innovation and the related capital expenditures;
- the impact of competition from other market participants, including but not limited to incumbent telephone companies, direct broadcast satellite (“DBS”) operators, wireless broadband and telephone providers, digital subscriber line (“DSL”) providers, fiber to the home providers and providers of video content over broadband Internet connections;
- general business conditions, unemployment levels and the level of activity in the housing sector and economic uncertainty or downturn;
- our ability to obtain programming at reasonable prices or to raise prices to offset, in whole or in part, the effects of higher programming costs (including retransmission consents and distribution requirements);
- our ability to develop and deploy new products and technologies including consumer services and service platforms;
- any events that disrupt our networks, information systems or properties and impair our operating activities or our reputation;
- the effects of governmental regulation on our business including subsidies to consumers, subsidies and incentives for competitors, costs, disruptions and possible limitations on operating flexibility related to, and our ability to comply with, regulatory conditions applicable to us;
- the ability to hire and retain key personnel;
- our ability to procure necessary services and equipment from our vendors in a timely manner and at reasonable costs including in connection with our network evolution and rural construction initiatives;
- the availability and access, in general, of funds to meet our debt obligations prior to or when they become due and to fund our operations and necessary capital expenditures, either through (i) cash on hand, (ii) free cash flow, or (iii) access to the capital or credit markets; and
- our ability to comply with all covenants in our indentures and credit facilities, any violation of which, if not cured in a timely manner, could trigger a default of our other obligations under cross-default provisions.

All forward-looking statements attributable to us or any person acting on our behalf are expressly qualified in their entirety by this cautionary statement. We are under no duty or obligation to update any of the forward-looking statements after the date of this annual report.

PART I

Item 1. *Business.*

Introduction

We are a leading broadband connectivity company and cable operator serving more than 32 million customers in 41 states through our Spectrum brand. Over an advanced high-capacity, two-way telecommunications network, we offer a full range of state-of-the-art residential and business services including Spectrum Internet®, TV, Mobile and Voice. For small and medium-sized companies, Spectrum Business® delivers the same suite of broadband products and services coupled with special features and applications to enhance productivity, while for larger businesses and government entities, Spectrum Enterprise™ provides highly customized, fiber-based solutions. Spectrum Reach® delivers tailored advertising and production for the modern media landscape. We also distribute award-winning news coverage and sports programming to our customers through SpectrumNetworks.

Our network, which we own and operate, passes over an estimated 55 million households and businesses across the United States. Our strategy is focused on the evolution of our network, expansion of our footprint, and the execution of high quality operations, including customer service. It allows us to maintain a state-of-the-art network delivering the most compelling converged connectivity services in a capital and time-efficient manner, and in turn, offer advanced services to consumers at highly attractive prices, together with outstanding customer service. Offering high quality, competitively priced products and outstanding service allows us to increase both the number of customers we serve over our fully deployed network and the number of products we sell to each customer. This combination also reduces the number of service transactions we perform per relationship, yielding higher customer satisfaction and lower customer churn, which results in lower costs to acquire and serve customers and greater profitability.

Evolution – Expanding the Capability of Our Network

Over the next three years, we plan to evolve our hybrid fiber coaxial network using a number of technologies, including spectrum expansion, initially to 1.2 GHz and then to 1.8 GHz, high splits to increase upstream speeds, Distributed Access Architecture ("DAA") and DOCSIS 4.0 technology. Through this process, which we expect to essentially complete by year end 2025, we will transform our network to enable multi-gigabit data speeds to customers. Those faster speeds will be offered in conjunction with our Spectrum mobile product and Advanced WiFi, providing customers seamless and convenient, ultra-fast converged connectivity in attractively priced packages, including Spectrum One, introduced in October 2022. In addition, we expect our network evolution to enable us to offer fiber on demand across the majority of our footprint. We also offer a comprehensive video product, and Xumo, a next generation streaming platform jointly owned with Comcast Corporation ("Comcast"), will create an app-based video platform with the ability to provide streaming video packages, leverage our Spectrum TV® application, aggregate consumer streaming applications, and provide an industry leading voice search.

Expansion – Building Our Future by Extending Our Network

Rural builds present strategic expansion opportunities of our footprint to unserved and underserved passings. Over the next several years, we expect to invest over \$6 billion, a portion of which we expect to offset with government funding including over \$1.7 billion of support awarded through December 31, 2022 in the Rural Development Opportunity Fund ("RDOF") auction and other federal, state and municipal grants. We expect to participate in additional federal, state and municipal grant programs over the coming years. This investment will allow us to offer a suite of broadband connectivity services including fixed Internet, WiFi and mobile to more than one million estimated passings in unserved areas in states where we currently operate. We have also renewed our focus on building to more passings inside and at the edge of our existing network. To accomplish all of this, we have invested in new teams, new training and new equipment. These investments will allow us to generate long-term infrastructure-style returns by taking further advantage of the efficiencies of the scale and quality of our network and construction capabilities while offering our high quality products and services to more homes and businesses.

Execution – Turning Our Strategy Into Success


We have competitive services and promote and package our services in ways that allow customers to have better products and save money. In addition, our focus on service quality complements our products and price. We improve the customer experience by digitizing service where customers prefer, performing proactive maintenance, and investing in systems and in our operations teams. As part of our investment in operations teams, we are making targeted adjustments to job structure, pay and benefits and career paths to improve the skills and tenure of our workforce.

Our principal executive offices are located at 400 Washington Blvd., Stamford, Connecticut 06902. Our telephone number is (203) 905-7801, and we have a website accessible at ir.charter.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, and all amendments thereto, are available on our website free of charge as soon as reasonably practicable after they have been filed. The information posted on our website is not incorporated into this annual report.

Corporate Entity Structure

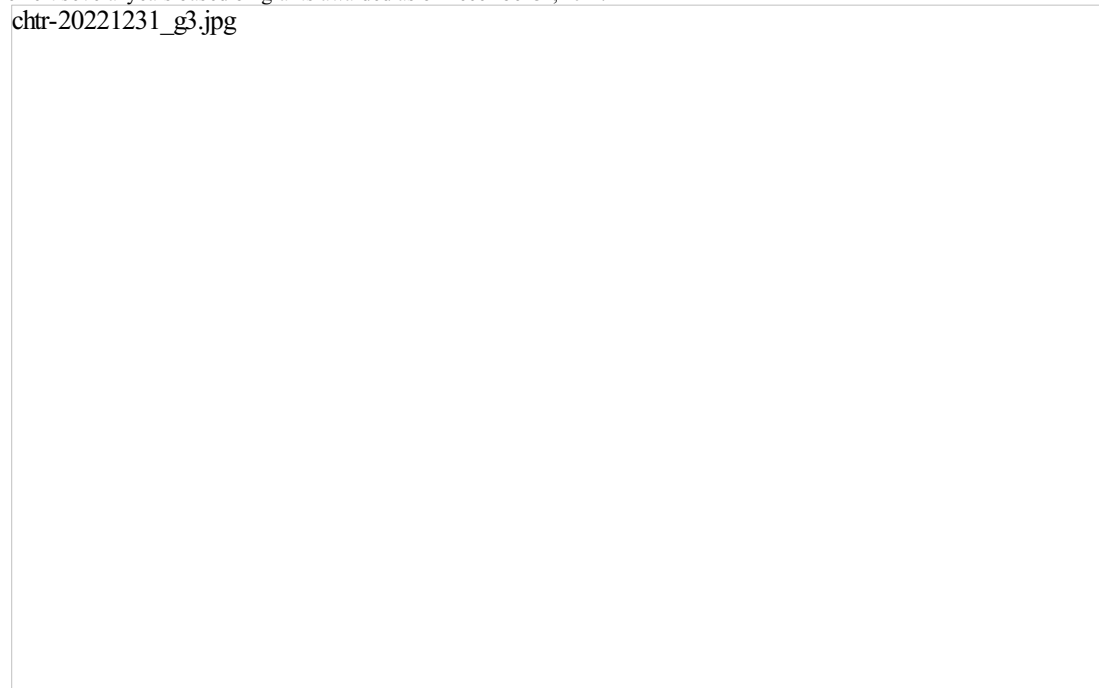
The chart below sets forth our entity structure and that of our direct and indirect subsidiaries. The chart does not include all of our affiliates and subsidiaries and, in some cases, we have combined separate entities for presentation purposes. The equity ownership percentages shown below for Charter Communications Holdings, LLC (“Charter Holdings”) are approximations. Indebtedness amounts shown below are principal amounts as of December 31, 2022. See Note 8 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data,” which also includes the accreted values of the indebtedness described below.

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Footprint

We operate in geographically diverse areas which are managed centrally on a consolidated level. The map below highlights our footprint along with our planned rural expansion over the next several years based on grants awarded as of December 31, 2022.



Products and Services

We offer our customers subscription-based Internet services, video services, and mobile and voice services. Our services are offered to residential and commercial customers on a subscription basis, with prices and related charges based on the types of service selected, whether the services are sold as a “bundle” or on an individual basis, and based on the equipment necessary to receive our services. Bundled services including some combination of our Internet, video, voice and/or mobile products are available to substantially all of our passings.

The following table summarizes our customer statistics for Internet, video, voice and mobile as of December 31, 2022 and 2021 (in thousands except per customer data and footnotes).

	Approximate as of December 31,	
	2022 ^(a)	2021 ^(a)
Customer Relationships ^(b)		
Residential	29,988	29,926
Small and Medium Business ("SMB")	2,207	2,143
Total Customer Relationships	32,195	32,069
Monthly Residential Revenue per Residential Customer ^(c)	\$ 114.66	\$ 113.61
Monthly SMB Revenue per SMB Customer ^(d)	\$ 164.50	\$ 165.50
Internet		
Residential	28,412	28,137
SMB	2,021	1,952
Total Internet Customers	30,433	30,089
Video		
Residential	14,497	15,216
SMB	650	617
Total Video Customers	15,147	15,833
Voice		
Residential	7,697	8,621
SMB	1,286	1,282
Total Voice Customers	8,983	9,903
Mobile Lines ^(e)		
Residential	5,116	3,448
SMB	176	116
Total Mobile Lines	5,292	3,564
Enterprise Primary Service Units ("PSUs") ^(f)	284	272

(a) We calculate the aging of customer accounts based on the monthly billing cycle for each account. On that basis, as of December 31, 2022 and 2021, customers include approximately 144,100 and 128,300 customers, respectively, whose accounts were over 60 days past due, approximately 52,800 and 26,800 customers, respectively, whose accounts were over 90 days past due, and approximately 214,100 and 43,200 customers, respectively, whose accounts were over 120 days past due. Bad debt expense associated with these past due accounts has been reflected in our consolidated statements of operations. The increase in past due accounts is predominately due to pre-existing and incremental unsubsidized services, including video services, for those customers participating in government assistance programs. These customers are downgraded to a fully subsidized Internet-only service.

(b) Customer relationships include the number of customers that receive one or more levels of service, encompassing Internet, video and voice services, without regard to which service(s) such customers receive. Customers who reside in residential multiple dwelling units ("MDUs") and that are billed under bulk contracts are counted based on the number of billed units within each bulk MDU. Total customer relationships exclude enterprise and mobile-only customer relationships.

(c) Monthly residential revenue per residential customer is calculated as total residential annual revenue divided by twelve divided by average residential customer relationships during the respective year and excludes mobile revenue and customers.

(d) Monthly SMB revenue per SMB customer is calculated as total SMB annual revenue divided by twelve divided by average SMB customer relationships during the respective year and excludes mobile revenue and customers.

- (e) Mobile lines include phones and tablets which require one of our standard rate plans (e.g., "Unlimited" or "By the Gig"). Mobile lines exclude wearables and other devices that do not require standard phone rate plans.
- (f) Enterprise PSUs represent the aggregate number of fiber service offerings counting each separate service offering at each customer location as an individual PSU.

Residential Services

Connectivity Services

We provide our customers with a suite of broadband connectivity services including fixed Internet, WiFi and mobile which when bundled together provides our customers with a differentiated converged connectivity experience while saving consumers and businesses money.

We offer Spectrum Internet products with speeds up to 1 Gbps across our entire footprint. Spectrum Internet bundled with our in-home Advanced WiFi allows multiple people within a single household to stream high definition ("HD") video content while simultaneously using our Internet service for other purposes including two-way video conferencing, among other things.

Our in-home WiFi product provides our Internet customers with high performance wireless routers and a managed WiFi service to maximize their wireless Internet experience. We offer Advanced WiFi service across nearly all of our residential footprint along with WiFi 6 routers capable of delivering speeds over 1 Gbps. With Advanced WiFi, customers enjoy a cloud-optimized WiFi connection and have the ability to view and control their WiFi network through our Spectrum application ("My Spectrum App"). The service enables parental control schedules to be set for children's devices or limit access entirely to unknown devices attempting to access the network.

Customers also have the option to add Spectrum WiFi pods to Advanced WiFi. WiFi pods are small, discreet access points that plug into electrical outlets in the home, providing broader and more consistent WiFi coverage. In 2022, we began rolling out Spectrum Security Shield across the residential footprint which protects all devices in the home using network-based security. This free security suite provides end point protection to computers in the home, enabling protection against computer viruses, spyware and threats from malicious actors across the Internet.

We also offer the capabilities of the Advanced WiFi service to MDUs as Advanced Community WiFi ("ACW"). With ACW, tenants will receive the same visibility and control over their apartment's WiFi networks through the My Spectrum App, while building managers will be able to see and manage the entire building's network through a purpose-built property service portal.

Our Spectrum Mobile service is offered to customers subscribing to our Internet service, and runs on Verizon Communications Inc.'s ("Verizon") mobile network, combined with Spectrum WiFi. We offer nationwide fifth generation ("5G") service at no incremental cost to our mobile customers enabling them to stream content several times faster and reducing latency when connecting to apps or webpages where 5G coverage exists. In addition, we continue to focus on improving the customer experience and integrating our mobile and fixed Internet products, providing greater WiFi access, speeds and performance using more than 500,000 of our out-of-home WiFi access points across our footprint combined with approximately 25 million out-of-home WiFi access points from other networks with which we partner, providing near nationwide coverage. In 2022, we launched an enhancement to our connectivity services with Spectrum Mobile Speed Boost at Home ("Speed Boost"). Customers are eligible for Speed Boost if they have both Spectrum Mobile and Spectrum Internet, a DOCSIS 3.1 modem and an Advanced WiFi router. When connected on their Spectrum Mobile device through their secure in-home WiFi private service set identifier ("SSID"), customers are now experiencing the fastest overall speeds up to 1 Gbps. The Spectrum Mobile SSID accelerates offload data from our mobile virtual network operator ("MVNO") cellular network to our own WiFi network and we expect it to be available across our footprint in 2023.

We provide wireline voice communications services using voice over Internet protocol ("VoIP") technology to transmit digital voice signals over our network. Our voice services include unlimited local and long distance calling to the United States, Canada, Mexico and Puerto Rico, voicemail, call waiting, caller ID, call forwarding and other features and offers international calling either by the minute, or through packages of minutes per month. For customers that subscribe to both our voice and video offerings, caller ID on TV is also available in most areas. We also offer Call Guard, an advanced caller ID and robocall blocking solution, for our residential and SMB voice customers. Call Guard reduces customer frustration and improves security by blocking malicious calls while ensuring our customers continue to receive the legitimate automated calls they need from schools or healthcare providers.

Video Services

We provide our customers with a choice of video programming services on a variety of platforms including through a digital set-top box or an Internet Protocol ("IP") device. Video customers have access to a variety of programming packages with approximately 375 channels available in home and out of home allowing our customers to access the programming they want, when they want it, on any device. Our video customers also have access to programmer authenticated applications such as Fox Now, Showtime and ESPN and direct to consumer applications such as Netflix and YouTube on certain set-top boxes. In June 2022, we entered into a joint venture with Comcast to develop and offer a next-generation streaming platform, Xumo, with the ability to provide streaming video packages, leverage our Spectrum TV® application, aggregate consumer streaming applications, and provide an industry leading voice search, with the benefit of new revenue streams.

Our video service also includes access to an interactive programming guide with parental controls and in virtually all of our footprint, video on demand ("VOD") or pay-per-view services. VOD service allows customers to select from approximately 90,000 titles at any time. VOD programming options may be accessed at no additional cost if the content is associated with a customer's linear subscription, or for a fee on a transactional basis. VOD services are also offered on a subscription basis included in a digital tier premium channel subscription or for a monthly fee. Pay-per-view channels allow customers to pay on a per-event basis to view a single showing of a one-time special sporting event, music concert, or similar event on a commercial-free basis. We also offer digital video recorder ("DVR") service that enables customers to digitally record programming and to pause and rewind live programming on set-top boxes and cloud DVR service, which allows customers to schedule, record and watch their favorite programming anytime from connected IP devices as well as SpectrumTV.com.

Customers are increasingly accessing their subscription video content through our highly rated Spectrum TV application via mobile devices and connected IP devices, such as Roku, Xumo TV and Samsung TV. Access to the Spectrum TV application is included in all Spectrum TV video plans and allows users to stream content across a growing number of platforms as well as access their full TV lineup, watch on demand content and gives them the ability to program their DVR from anywhere. Customers are also able to purchase their video services within the Spectrum TV application.

Commercial Services

We offer scalable broadband communications solutions for businesses and carrier organizations of all sizes, selling Internet access, data networking, fiber connectivity to cellular towers and office buildings, video entertainment services and business telephone services.

Small and Medium Business

Spectrum Business offers Internet, voice and video services to SMBs over our hybrid fiber coaxial network. In addition, we offer our Spectrum Mobile service to SMB customers. Spectrum Business includes a full range of video programming and offers Internet speeds up to 1 Gbps across our entire footprint. Spectrum Business also includes a set of business services including static IP and business WiFi, e-mail and security, and voice services through either a traditional voice offering or hosted voice solution. In December 2022, we launched Spectrum Business Connect with RingCentral as our new SMB communications solution that includes Spectrum Internet, voice and complementary mobility features, and allows our customers' remote and office employees to stay more easily connected regardless of their location. We also offer Wireless Internet Backup to our SMB customers which is designed to enhance and protect Internet service for SMBs in the event of a network disruption.

Enterprise

Spectrum Enterprise offers tailored communications products and managed service solutions over a high-capacity last-mile network with speeds up to 100 Gbps to larger businesses and government entities (local, state and federal), in addition to wholesale services to mobile and wireline carriers. The Spectrum Enterprise product portfolio includes connectivity services such as Internet Access (fiber, wireless and coax delivered); Wide Area Network ("WAN") solutions (Ethernet, Software Defined ("SD")-WAN and cloud connectivity) that privately and securely connect geographically dispersed customer locations and cloud service providers; and Managed Services which address a wide range of enterprise networking (e.g. routing, Local Area Network ("LAN"), WiFi) and security (e.g. firewall, Distributed Denial of Service ("DDoS") protection) challenges. To meet the communications needs of these more sophisticated customers, Spectrum Enterprise also offers an array of voice trunking services and unified messaging, communications and collaboration solutions. In December 2022, we launched Unified Communications with RingCentral, which integrates Spectrum Enterprise's managed services to complement its other solutions and gives customers more choices for enhancing their digital experience across locations and devices. In addition, for

industries such as hospitality, education and healthcare where specialized video solutions are demanded, Spectrum Enterprise offers a wide range of solutions designed to meet those requirements. Spectrum Enterprise serves businesses nationally by combining its large serviceable footprint with a robust portfolio of fiber lit buildings and a significant wholesale partner network. As a result, these customers benefit by obtaining advanced solutions from a single provider who is committed to an exceptional customer experience and who delivers compelling value by simplifying procurement and offering competitive pricing potentially reducing our customers' costs.

Advertising Services

Our advertising sales division, Spectrum Reach, offers local, regional and national businesses the opportunity to advertise in individual and multiple service areas on cable television networks, various streaming services and numerous advanced advertising platforms. We receive revenues from the sale of local advertising across various platforms for networks such as TBS, CNN and ESPN. We insert local advertising on up to 100 channels in over 90 markets. Our large footprint provides opportunities for advertising customers to address broader regional audiences from a single provider and thus reach more customers with a single transaction. Our size also provides scale to invest in new technology to create more targeted and addressable advertising capabilities.

Available advertising time is generally sold by our advertising sales force. In some service areas, we have formed advertising interconnects or entered into representation agreements with other video distributors, including, among others, Verizon, DirecTV and Comcast, under which we sell advertising on behalf of those operators. In other service areas, we enter into representation agreements under which another operator in the area will sell advertising on our behalf. These arrangements enable us and our partners to represent and deliver commercials on their inventory across wider geographic areas, replicating the reach of local broadcast television stations to the extent possible. In addition, we enter into interconnect agreements from time to time with other cable operators, which, on behalf of a number of video operators, sells advertising time to national and regional advertisers in individual or multiple service areas.

Additionally, we sell the advertising inventory of our owned and operated local sports and news channels, of our regional sports networks that carry Los Angeles Lakers' basketball games and other sports programming and of SportsNet LA, a regional sports network that carries Los Angeles Dodgers' baseball games and other sports programming.

In 2022, we expanded our deployment of household addressability ("HHA"), which allows for more precise targeting across our footprint. Additionally, in conjunction with other MVPDs, Spectrum Reach enables multi-channel cable networks (e.g. AMC, Discovery) to deploy HHA on their own inventory in our footprint, charging them an enablement fee. We also continue to further enhance our Ad Portal, which allows small businesses to purchase local cable advertising and/or creative services via our web portal with limited sales personnel interaction at a price within their budgets. Our fully deployed Audience App, which uses our proprietary set-top box viewership data (all anonymized and aggregated), allows us to create data-driven linear TV campaigns for local advertisers. In 2022, Spectrum Reach launched its first programmatic sales platform allowing advertising agencies and advertisers to buy inventory in a fully automated way. Streaming TV, which is largely comprised of Spectrum TV application impressions, as well as those from numerous over-the-top streaming content providers, is part of our suite of advanced advertising products available to the marketplace. Spectrum Reach is also now employing multi-screen deterministic attribution services for television and streaming services that lets advertisers know the effectiveness of their advertising on Spectrum Reach's platform.

Other Services

Regional Sports Networks

We have an agreement with the Los Angeles Lakers for rights to distribute all locally available Los Angeles Lakers' games through 2033. We broadcast those games on our regional sports network, Spectrum SportsNet. American Media Productions, LLC ("American Media Productions"), an unaffiliated third party, owns SportsNet LA, a regional sports network carrying the Los Angeles Dodgers' baseball games and other sports programming. In accordance with agreements with American Media Productions, we act as the network's exclusive affiliate and advertising sales representative and have certain branding and programming rights with respect to the network. In addition, we provide certain production and technical services to American Media Productions. The affiliate, advertising, production and programming agreements continue through 2038. We also own 26.8% of Sterling Entertainment Enterprises, LLC (doing business as SportsNet New York), a New York City-based regional sports network that carries New York Mets' baseball games as well as other regional sports programming.

News Channels

We own and manage 37 local news channels, including Spectrum News NY1® and Spectrum News SoCal, 24-hour news channels focused on New York City and Los Angeles, respectively. Our local news channels connect the diverse communities and neighborhoods we serve providing 24/7 hyperlocal content, focusing on news, programming and storytelling that addresses the deeper needs and interests of our customers. Customers can also read, watch and listen to news stories by our Spectrum News journalists and local partner publications on their mobile device on our Spectrum News application and certain smart TVs and streaming devices.

Pricing of Our Products and Services

Our revenues are principally derived from the monthly fees customers pay for the services we provide. We typically charge a one-time installation fee which is sometimes waived or discounted in certain sales channels during certain promotional periods.

Our Spectrum pricing and packaging ("SPP") generally offers a standardized price across our services and add-on services allowing customers to design a bundle offering that fits their needs. We believe SPP:

- offers a higher quality and more value-based set of services relative to our competitors, including fast Internet speeds, hundreds of HD channels and a transparent pricing structure;
- offers simplicity for customers to understand our offers, and for our employees in service delivery;
- drives our ability to package more services at the time of sale, thus increasing revenue per customer;
- drives higher customer satisfaction, lower service calls and churn; and
- allows for gradual price increases at the end of promotional periods.

We also have specialized offerings to enhance affordability of our Internet product for qualified low-income households, including Spectrum Internet Assist, a 30 megabits per second ("Mbps") service, and Internet 100, a 100 Mbps service. Both are low cost and include a modem for no additional charge. In addition, many of our customers are eligible for a subsidy through the Federal Communications Commission's ("FCC") Affordable Connectivity Program ("ACP") which provides eligible low-income households with up to \$30 per month towards Internet service.

In October 2022, we introduced Spectrum One, which brings together in a high-value package, Spectrum Internet, Advanced WiFi and Unlimited Spectrum Mobile, offering consumers fast, reliable and secure online connections on their favorite devices at home and on-the-go. Alternatively, our mobile customers can choose one of two simple ways to pay for data. Customers can choose from unlimited or by-the-gig data usage plans and can easily switch between mobile data plans during the month. All plans include 5G service, free nationwide talk and text, and simple pricing that includes all taxes and fees. Customers can also purchase mobile devices and accessory products and have the option to pay for devices under interest-free monthly installment plans. Our device portfolio includes 5G models from Apple, Google and Samsung and we offer trade-in options along with a bring-your-own-device ("BYOD") program which lowers the costs for our customers switching to Spectrum Mobile from other mobile operators.

Our Network Technology

Our network includes three key components: a national backbone, regional/metro networks and a "last-mile" network. Both our national backbone and regional/metro network components utilize a redundant IP ring/mesh fiber architecture. The national backbone component provides connectivity from regional demarcation points to nationally centralized content, connectivity and services. The regional/metro network components provide connectivity between the regional demarcation points and headends within a specific geographic area and enable the delivery of content and services between these network components.

Our last-mile network utilizes a hybrid fiber coaxial cable ("HFC") architecture, which combines the use of fiber optic cable with coaxial cable. In most systems, we deliver our signals via fiber optic cable from the headend to a group of nodes, and use coaxial cable to deliver the signal from individual nodes to the homes served by that node. Our design standard allows spare fiber strands to each node to be utilized for additional residential traffic capacity, and enterprise customer needs as they arise. For our Spectrum Enterprise customers, fiber optic cable is extended to the customer's site. For certain new buildouts, including for our rural construction initiative, and MDU sites, we utilize a fiber deployment. We believe that this hybrid network design provides high capacity and signal quality with a cost efficient path to increased speeds.

HFC architecture benefits include:

- bandwidth capacity to enable traditional and two-way video and broadband services;
- dedicated bandwidth for delivering two-way services, signal quality and higher service reliability, which provides an advantage over fixed wireless offerings;
- the ability to upgrade capacity at a lower incremental capital cost relative to our competitors; and
- a powered network enabling Advanced WiFi out-of-home and our future 5G small cell access points.

Our systems currently provide a two-way all-digital platform, leveraging DOCSIS 3.1 technology and bandwidth of 750 megahertz or greater, to virtually all of our estimated passings. This bandwidth-rich network enables us to offer a large selection of HD channels and Spectrum Internet Gig across all of our footprint which enables us to provide fast, reliable and secure online connections and meet nearly all current residential customer demands today. Over the next three years, we intend to deploy network enhancements to upgrade our footprint initially expanding our spectrum to 1.2 GHz through a module upgrade in the hub, node and amplifier and using high splits to deliver multi-gig speed capabilities while using the current DOCSIS 3.1 customer premise equipment. Later, we will continue to expand our spectrum to 1.2 GHz but will use DAA to deliver even faster speeds when using the next generation of DOCSIS modem, DOCSIS 4.0. Next, we will begin to deploy DOCSIS 4.0 technology, to further increase our spectrum to 1.8 GHz enabling even higher speed capabilities. This network evolution will also allow us to extend fiber services to the home in a success based “Fiber on Demand” manner and is the technology currently deployed in our rural fiber buildouts. We plan to complement our wireline investments with planned WiFi upgrades for in-home routers. With nearly 500 million devices connected wirelessly to our network in our customer's homes and businesses, we will unlock our network investments for multi-gigabit speeds through the deployment of WiFi 6E in 2023.

We own 210 Citizen Broadband Radio Service (“CBRS”) Priority Access Licenses (“PALs”) and intend to use these licenses along with unlicensed CBRS spectrum to build our own 5G data-only mobile network on targeted 5G small cell sites leveraging our HFC network to provide power and data connectivity to the majority of the sites. These 5G small cells, combined with growing WiFi capabilities, increase speed and reliability along with improving our cost structure through offload onto our owned networks. In 2022, we began a trial of the 5G network, which will inform our deployment plan for 5G small cell sites, as part of our broader multi-year 5G mobile network buildout, based on disciplined cost reduction targets.

Rural Construction Initiative

In 2022, we continued our rural broadband construction initiative in which we intend to expand our network to offer a suite of broadband connectivity services including fixed Internet, WiFi and mobile to more than one million estimated passings in unserved areas in states where we currently operate. We expect to invest over \$6 billion over the next several years, a portion of which we expect to offset with government funding including over \$1.7 billion of support awarded through December 31, 2022 in the RDOF auction and other federal, state and municipal grants, and we expect to participate in additional federal, state and municipal grant programs over the coming years. In addition to construction in areas subsidized by various government grants, we expect to continue rural construction in areas near our current plant and in areas surrounding subsidized construction where synergies can be achieved. These investments will allow us to generate long-term infrastructure-style returns by further taking advantage of the efficiencies of the scale and quality of our network and construction capabilities while offering our high quality products and services to more homes and businesses. We expect these newly-served homes will be enabled to engage in distance learning, remote work, telemedicine and other bandwidth-heavy applications that require high speed broadband connectivity. Newly-served rural areas will also benefit from our high-value SPP structure including our voice and mobile offerings, as well as our comprehensive selection of video products. The successful and timely execution of such fiber-based construction is dependent on a variety of external factors, including the make-ready and utility pole permitting processes. With fewer homes and businesses in these areas, broadband providers need to access multiple poles per home, as opposed to multiple homes per pole in higher-density settings. As a result, pole applications, pole replacement rules and their affiliated issue resolution processes are all factors that can have a significant impact on construction timing and speed to completion. The RDOF auction rules and other subsidy grants establish construction milestones for the build-out utilizing subsidized funding. Failure to meet those milestones could subject us to financial penalties.

Management, Customer Operations and Marketing

Our operations are centralized, with senior executives responsible for coordinating and overseeing operations, including establishing company-wide strategies, policies and procedures. Sales and marketing, field operations, customer operations, network operations, engineering, advertising sales, human resources, legal, government relations, information technology and finance are all directed at the corporate level. Regional and local field operations are responsible for customer premise service transactions and maintaining and constructing that portion of our network which is located outdoors. Our field operations

strategy includes completing a significant portion of our activity with our employees which we find drives consistent and higher quality services. In 2022, our in-house field operations workforce handled approximately 80% of our customer premise service transactions.

We continue to focus on improving the customer experience through enhanced product offerings, reliability of services, and delivery of quality customer service. As part of our operating strategy, we insource most of our customer operations workload. Our in-house call centers handle nearly all of our total customer service calls. We manage our customer service call centers centrally to ensure a consistent, high quality customer experience. In addition, we route calls by call type to specific agents that only handle such call types, enabling agents to become experts in addressing specific customer needs, creating a better customer experience. Service from our call centers continues to become more efficient as a result of new tool enhancements that give our front-line customer service agents more context and real-time information about the customer and their services which allows them to more effectively troubleshoot and resolve issues. Our call center agent desktop interface tool enables virtualization of all call centers thereby better serving our customers. Virtualization allows calls to be routed across our call centers regardless of the location origin of the call, reducing call wait times, and saving costs.

We also provide customers with the opportunity to interact with us in the manner they choose through self-service options on our customer website and mobile device application, or via telephonic communication, online chat and social media. Our customer websites and mobile applications enable customers to pay their bills, manage their accounts, order and activate new services and utilize self-service help and support. In addition, our self-install program has been beneficial for customers who need flexibility in the timing of their installation.

We sell our residential and commercial services using national brand platforms known as Spectrum, Spectrum Business, Spectrum Enterprise and Spectrum Reach. These brands reflect our comprehensive approach to industry-leading products, driven by speed, performance and innovation. Our marketing strategy emphasizes the sale of our bundled services through targeted direct response marketing programs to existing and potential customers, and increases awareness and the value of the Spectrum brand. Our marketing organization creates and executes marketing programs intended to grow customer relationships, increase the number of services we sell per relationship, retain existing customers and cross-sell additional products to current customers. We monitor the effectiveness of our marketing efforts, customer perception, competition, pricing, and service preferences, among other factors, in order to increase our responsiveness to our customers and to improve our sales and customer retention. The marketing organization manages all residential and SMB sales channels including inbound, direct sales, on-line, outbound telemarketing and stores.

Programming

We believe that offering a wide variety of video programming choices influences a customer's decision to subscribe to and retain our cable video services. We obtain basic and premium programming, usually pursuant to written contracts from a number of suppliers. Media corporation and broadcast station group consolidation has, however, resulted in fewer suppliers and additional selling power on the part of programming suppliers.

Programming is usually made available to us for a license fee, which is generally paid based on the number of customers to whom we make that programming available. Programming license fees may include "volume" discounts and other financial incentives and/or ongoing marketing support, as well as discounts for channel placement or service penetration. For home shopping channels, we typically receive a percentage of the revenue attributable to our customers' purchases. We also offer VOD and pay-per-view channels of movies and events that are subject to a revenue split with the content provider.

Competition

Residential Services

We face intense competition for residential customers, both from existing competitors and, as a result of the rapid development of new technologies, services and products, from new entrants.

Internet Competition

Our residential Internet service faces competition across our footprint from fiber-to-the-home ("FTTH"), fixed wireless broadband, Internet delivered via satellite and DSL services. AT&T Inc. ("AT&T"), Frontier Communications Corporation ("Frontier") and Verizon are our primary FTTH competitors. Given the FTTH deployments of our competitors, launches of broadband services offering 1 Gbps speed have recently grown. Several competitors, including AT&T, Frontier, Verizon,

WideOpenWest, Inc. ("WOW") and Google Fiber, deliver 1 Gbps broadband speed (and some deliver multi Gbps) in at least a portion of their footprints which overlap our footprint. Additionally, several national mobile network operators offer Long Term Evolution ("LTE") or 5G delivered fixed wireless home Internet service in our markets. In several markets, we also face competition from one or more fixed wireless providers that deliver point-to-point Internet connectivity. DSL service is offered across our footprint often at prices lower than our Internet services, although typically at speeds much lower than the minimum speeds we offer as part of SPP. In addition, a growing number of commercial areas, such as retail malls, restaurants and airports, offer WiFi Internet service. Numerous local governments are also considering or actively pursuing publicly subsidized WiFi Internet access networks. These options offer alternatives to cable-based Internet access. We face terrestrial broadband Internet (defined as at least 25 Mbps) competition from three primary competitors, AT&T, Frontier and Verizon, in approximately 35%, 11% and 5% of our operating footprint, respectively.

Video Competition

Our residential video service faces competition from DBS service providers, which have a national footprint and compete in all of our operating areas. DBS providers offer satellite-delivered pre-packaged programming services that can be received by relatively small and inexpensive receiving dishes. DBS providers offer aggressive promotional pricing, exclusive programming and video services that are comparable in many respects to our residential video service. Our residential video service also faces competition from large telecommunications companies, primarily Verizon, which offer wireline video services in significant portions of our operating areas.

Our residential video service also faces growing competition across our footprint from a number of other sources, including companies that deliver linear network programming, movies and television shows on demand and other video content over broadband Internet connections to televisions, computers, tablets and mobile devices. These competitors include virtual multichannel video programming distributors ("vMVPDs") such as Hulu Live, YouTube TV, Sling TV, Philo and DirecTV Stream. Other online video business models and products have also developed, some offered by programmers that have not traditionally sold programming directly to consumers, including, (i) subscription video on demand ("SVOD") services such as Netflix, Apple TV+, Amazon Prime, Hulu Plus, Disney+, HBO Max, Peacock, Paramount+, AMC+, Starz and Showtime Anytime, (ii) ad-supported free online video products, including YouTube and Pluto TV, some of which offer programming for free to consumers that we currently purchase for a fee, (iii) pay-per-view products, such as iTunes, and (iv) additional offerings from mobile providers which continue to integrate and bundle video services and mobile products. Historically, we have generally viewed SVOD online video services as complementary to our own video offering. As the proliferation of online video services grows, however, services from vMVPDs and direct to consumer offerings, as well as piracy and password sharing, negatively impact the number of customers purchasing our video product.

Voice Competition

Our residential voice service competes with wireless and wireline phone providers across our footprint, as well as other forms of communication, such as text messaging on cellular phones, instant messaging, social networking services, video conferencing and email. We also compete with "over-the-top" phone providers, such as Vonage, Skype, MagicJack, Google Voice and Ooma, Inc., as well as companies that sell phone cards at a cost per minute for both national and international service. The increase in the number of different technologies capable of carrying voice services and the number of alternative communication options available to customers as well as the replacement of wireline services by wireless have intensified the competitive environment in which we operate our residential voice service.

Mobile Competition

Our mobile service faces competition from national mobile network operators including AT&T, Verizon and T-Mobile US, Inc. ("T-Mobile"), fixed wireless providers, as well as a variety of regional operators and mobile virtual network operators. Most carriers offer unlimited data packages to customers while some also offer free devices. Various operators also offer wireless Internet services delivered over networks which they continue to enhance to deliver faster speeds. AT&T, Verizon and T-Mobile continue to expand 5G mobile services. Additionally, in connection with Dish Network Corporation's acquisition of Sprint Corporation's ("Sprint") prepaid mobile services businesses, the FCC and Department of Justice ("DOJ") have imposed a timeline on Dish Network Corporation (70% by June 2023) for 5G network development and expansion. We also compete for retail activations with other resellers that buy bulk wholesale service from wireless service providers for resale.

Regional Competitors

In some of our operating areas, other competitors have built networks that offer Internet, video and voice services that compete with our services. For example, in certain service areas, our residential Internet, video and voice services compete with WOW, altafiber, Google Fiber and Astound Broadband.

Additional Competition

In addition to multi-channel video providers, cable systems compete with other sources of news, information and entertainment, including over-the-air television broadcast reception, live events, movie theaters and the Internet. Competition is also posed by fixed wireless and satellite master antenna television ("SMATV") systems serving MDUs, such as condominiums, apartment complexes, and private residential communities.

Business Services

We face intense competition across each of our business services product offerings. Our SMB Internet, video and voice services face competition from a variety of providers as described above. Our enterprise solutions also face competition from the competitors described above as well as cloud-based application-service providers, managed service providers and other telecommunications carriers, such as metro and regional fiber-based carriers.

Advertising

We face intense competition for advertising revenue across many different platforms and from a wide range of local and national competitors. Advertising competition has increased and will likely continue to increase as new advertising platforms seek to attract the same advertisers. We compete for advertising revenue against, among others, local broadcast stations, national cable and broadcast networks, radio stations, print media and online advertising companies and content providers.

Seasonality and Cyclicalities

Our business is subject to seasonal and cyclical variations. Our results are impacted by the seasonal nature of customers receiving our cable services in college and vacation service areas. Our revenue is subject to cyclical advertising patterns and changes in viewership levels. Our advertising revenue is generally higher in the second and fourth calendar quarters of each year, due in part to increases in consumer advertising in the spring and in the period leading up to and including the holiday season. U.S. advertising revenue is also cyclical, benefiting in even-numbered years from advertising related to candidates running for political office and issue-oriented advertising. Our capital expenditures and trade working capital are also subject to significant seasonality based on the timing of subscriber growth, network programs, specific projects and construction.

Regulation and Legislation

The following summary addresses the key regulatory and legislative developments affecting the cable industry and our services for both residential and commercial customers. Cable systems and related communications networks and services are extensively regulated by the federal government (primarily the FCC), certain state governments and many local governments. A failure to comply with these regulations could subject us to substantial penalties. Our business can be dramatically impacted by changes to the existing regulatory framework, whether triggered by legislative, administrative, or judicial rulings. Congress and the FCC have frequently revisited the subject of communications regulation and they are likely to do so again in the future. We could be materially disadvantaged in the future if we are subject to new laws, regulations or regulatory actions that do not equally impact our key competitors. For example, Internet-delivered streaming video services compete with our traditional video service, but they are not subject to the same level of federal, state, and local regulation. We cannot provide assurance that the already extensive regulation of our business will not be expanded in the future. In addition, through May 2023, we are subject to Charter-specific conditions regarding certain business practices as a result of the FCC's approval of the merger in 2016 with Time Warner Cable Inc. ("TWC") and acquisition of Bright House Networks, LLC ("Bright House").

Video Service

Must Carry/Retransmission Consent

There are two alternative legal methods for carriage of local broadcast television stations on cable systems. Federal "must carry" regulations require cable systems to carry local broadcast television stations upon the request of the local broadcaster.

Alternatively, federal law includes “retransmission consent” regulations, by which popular commercial television stations can prohibit cable carriage unless the cable operator first negotiates for “retransmission consent,” which may be conditioned on significant payments or other concessions. Popular stations routinely invoke “retransmission consent” and demand substantial compensation increases in their negotiations with cable operators, thereby significantly increasing our operating costs.

Pole Attachments

The Communications Act of 1934, as amended (the “Communications Act”), requires many investor-owned utilities owning utility poles to provide cable systems with access to poles and conduits and also subjects the rates charged for this access to either federal or state regulation. The federally regulated rates now applicable to pole attachments used for cable or telecommunications services, including when offered together with Internet service, are substantially similar. The FCC’s approach does not directly affect the rate in states that self-regulate, but many of those states have substantially the same rate for all communications attachments. We sometimes face challenges getting access to poles in rural areas when the FCC pole attachment rules do not apply.

Other FCC Regulatory Matters

The Communications Act and FCC regulations cover a variety of additional areas applicable to our video services, including, among other things: (1) licensing of systems and facilities, including the grant of various spectrum licenses; (2) equal employment opportunity obligations; (3) customer service standards; (4) technical standards; (5) mandatory blackouts of certain network and syndicated programming; (6) restrictions on political advertising; (7) restrictions on advertising in children’s programming; (8) ownership restrictions; (9) posting of certain information on an FCC “public file” website, including but not limited to political advertising records, equal employment opportunity practices, compliance with children’s programming requirements, policies for commercial leased access, system information, and channel carriage information including disclosure of our ownership interests in channels we carry; (10) emergency alert systems; (11) inside wiring and contracts for MDU complexes; (12) accessibility of content, including requirements governing video-description and closed-captioning; (13) competitive availability of cable equipment; (14) the provision of up to 15% of video channel capacity for commercial leased access by unaffiliated third parties; and (15) public, education and government entity access requirements. Each of these regulations restricts our business practices to varying degrees and may impose additional costs on our operations.

The FCC regulates spectrum usage in ways that could impact our operations including for microwave backhaul, broadcast, unlicensed WiFi and CBRS. Our ability to access and use spectrum that may become available in the future is uncertain and may be limited by further FCC auction or allocation decisions. New spectrum obtained by other parties could also lead to additional wireless competition to our existing and future services.

It is possible that Congress or the FCC will expand or modify its regulation of cable systems or the services delivered over cable systems and competing services in the future, and we cannot predict at this time how that might impact our business.

Copyright

The carriage of television and radio broadcast signals by cable systems are subject to a federal compulsory copyright license. The copyright law provides copyright owners the right to audit our payments under the compulsory license, and the Copyright Office is currently considering modifications to the license’s royalty calculations and reporting obligations. The possible modification or elimination of this license is the subject of continuing legislative proposals and administrative review and could adversely affect our ability to obtain desired broadcast programming.

Franchise Matters

Our cable systems generally are operated pursuant to nonexclusive franchises, permits, and similar authorizations granted by a municipality or other state or local government entity in order to utilize and cross public rights-of-way.

Cable franchises generally are granted for fixed terms and in many cases include monetary penalties for noncompliance and may be terminable if the franchisee fails to comply. The specific terms and conditions of cable franchises vary significantly between jurisdictions. They generally contain provisions governing cable operations, franchise fees, system construction, maintenance, technical performance, customer service standards, supporting and carrying public, education and government access channels, and changes in the ownership of the franchisee. Although local franchising authorities have considerable discretion in establishing franchise terms, certain federal protections benefit cable operators. For example, federal law imposes a cap on franchise fees of 5% of gross revenues from the provision of cable services over the cable system. In 2019, the FCC

clarified that the value of in-kind contribution requirements set forth in cable franchises is subject to the statutory cap on franchise fees, and it reaffirmed that state and local authorities are barred from imposing franchise fees on revenues derived from non-cable services, such as Internet services, provided by cable operators over cable systems. Those rules were generally upheld by a federal court in 2021.

A number of states have adopted franchising laws that provide for state-issued franchising. Generally, state-issued cable franchises are for a fixed term (or in perpetuity), streamline many of the traditional local cable franchise requirements and eliminate local negotiation and enforcement of terms.

The Communications Act provides for an orderly franchise renewal process in which granting authorities may not unreasonably deny renewals. If we fail to obtain renewals of franchises representing a significant number of our customers, it could have a material adverse effect on our consolidated financial condition, results of operations, or our liquidity. Similarly, if a franchising authority's consent is required for the purchase or sale of a cable system, the franchising authority may attempt to impose more burdensome requirements as a condition for providing its consent.

Internet Service

The FCC originally classified broadband Internet access services, such as those we offer, as an "information service," which exempted the service from traditional communications common carrier laws and regulations. In 2015, the FCC reclassified broadband Internet access services as "telecommunications service" and, on that basis, imposed a number of "net neutrality" rules governing the provision of broadband service. In 2017, the FCC reversed its 2015 decision and eliminated the 2015 rules, other than a transparency requirement, which obligates us to disclose performance statistics and other service information to consumers. It is possible that the FCC might again revise its approach to broadband Internet access, or that Congress might enact legislation affecting the rules applicable to the service. The application of new legal requirements to our Internet services could adversely affect our business.

The FCC recently adopted new rules to expand the surviving transparency requirement by requiring us to post standardized labels similar to the format of food nutrition labels for each of our currently available consumer Internet offerings. These new rules are scheduled to take effect six months after approval by the federal Office of Management and Budget.

The 2017 FCC decision reclassifying Internet access services also ruled that state regulators may not impose obligations similar to federal network neutrality obligations that the FCC eliminated, but this blanket prohibition was vacated by the U.S. Court of Appeals in 2019. The court left open the possibility that individual state laws could be deemed preempted on a case by case basis if it is shown that they conflict with federal law. Several states have adopted rules similar to the network neutrality requirements that were eliminated by the FCC, and the California rules were upheld in federal court.

California has also adopted other regulations on Internet services, including network resiliency rules to assure backup power is available after natural disasters and other outages, and it has an open proceeding to consider the imposition of service quality metrics on Internet service providers. New York adopted legislation that would have required Internet service providers to offer a discounted Internet service to qualifying low-income consumers, but a federal district judge enjoined enforcement as likely to be deemed rate regulation of Internet service that would be preempted by federal law. That decision is currently being appealed. We cannot predict what other legislation and regulations may be adopted by states or how challenges to such requirements will be resolved.

In recent years, the federal, state and local governments have offered billions of dollars in subsidies to companies deploying broadband to areas deemed to be "unserved" or "underserved," using funds from the FCC's RDOF auction in 2020, The American Rescue Plan Act of 2021 ("ARPA"), and The Infrastructure Investment and Jobs Act of 2021 (the "IIJA"). We support such subsidies, provided they are not directed to areas that are already served, and have sought and expect to continue to seek subsidies for our own broadband construction in unserved and underserved areas through programs including RDOF and those created pursuant to ARPA and, if regulatory requirements are reasonable, the IIJA. We have been awarded over \$1.7 billion in the RDOF auction and other federal, state and municipal grants that will partially fund, along with our substantial additional investment, the construction of new broadband infrastructure to more than one million estimated passings. Our awards through RDOF and ARPA include a number of regulatory requirements, such as serving as the carrier of last resort and completing increasingly larger portions of the network construction by certain dates. If we fail to meet these obligations, we could be subject to substantial government penalties.

The market for our Internet services is affected by participation in and the general availability of programs that offer federal subsidies for certain low-income consumers for the purchase of Internet access service. In 2021, pursuant to Congressional

appropriation for COVID relief, the FCC established a temporary monthly Emergency Broadband Benefit Program ("EBBP") subsidy of up to \$50 for most eligible low-income households. With the funding for EBBP set to run out, Congress in the IIJA authorized \$14.2 billion for the successor ACP that provides up to a \$30 monthly discount for most eligible customers paid to the household's broadband provider. We elected to participate in the EBBP and ACP, and the FCC regulates many of the terms on which we provide ACP services, including restrictions on our ability to refuse service to prospective eligible customers based upon their credit or payment history. The ACP discount enables eligible households to purchase our Spectrum Internet Assist service at no cost to them, and we cannot predict whether Congress or the FCC will provide additional funding to extend the ACP, or on what terms, when ACP funding runs out, which is expected to be at some point in 2024.

Wireline Voice Service

The FCC has never classified the VoIP wireline telephone services we offer as "telecommunications services" that are subject to traditional federal common carrier regulation, but instead has imposed some of these regulatory requirements on a case-by-case basis, such as requirements relating to 911 emergency services ("E911"), Communications Assistance for Law Enforcement Act ("CALEA") (the statute governing law enforcement access to and surveillance of communications), Universal Service Fund contributions, customer privacy and Customer Proprietary Network Information protections, number portability, network outage reporting, rural call completion, disability access, regulatory fees, back-up power, robocall mitigation and discontinuance of service. It is possible that the FCC or Congress will impose additional federal requirements on our VoIP telephone services in the future.

Our VoIP telephone services are subject to certain state and local regulatory fees such as E911 fees and contributions to state universal service funds. Additionally, to comply with RDOF program requirements, we have chosen in the RDOF areas to offer Lifeline VoIP telephone services subject to traditional federal and state common carrier regulations. Except where we have chosen to offer VoIP telephone services in such a manner, we believe that our VoIP telephone services should be governed primarily by federal regulation. A federal appellate court affirmed our successful challenge to Minnesota's attempt to generally apply telephone regulation to our VoIP services, but that ruling is limited to the seven states in the 8th Circuit. Some states have attempted to subject cable VoIP services, such as our VoIP telephone service, to state level regulation. California has imposed reporting and other obligations on our VoIP services, including backup power requirements, and has proposed the imposition of service quality metrics on VoIP services. We have registered with or obtained certificates or authorizations from the FCC and the state regulatory authorities in those states in which we offer competitive voice services in order to ensure the continuity of our services. However, it is unclear whether and how these and other ongoing regulatory matters ultimately will be resolved. State regulatory commissions and legislatures may continue to consider imposing regulatory requirements on our fixed telephone services.

Mobile Service

Our Spectrum Mobile service offers mobile Internet access and telephone service. We provide this service as an MVNO using Verizon's network and our network through Spectrum WiFi. As an MVNO, we are subject to many of the same FCC regulations that apply to facilities-based wireless carriers, as well as certain state or local regulations, including (but not limited to): E911, local number portability, customer privacy, CALEA, universal service fund contribution, robocall mitigation and hearing aid compatibility and safety and emission requirements for mobile devices. Spectrum Mobile's broadband Internet access service is also subject to the FCC's transparency rule. The FCC or other regulatory authorities may adopt new or different regulations for MVNOs and/or mobile service providers in the future, or impose new taxes or fees applicable to Spectrum Mobile, which could adversely affect the service offering or our business generally. For example, California has proposed the imposition of service quality metrics on mobile services.

Privacy and Information Security Regulation

The Communications Act limits our ability to collect, use, and disclose customers' personally identifiable information for our Internet, video and voice services. We are subject to additional federal, state, and local laws and regulations that impose additional restrictions on the collection, use and disclosure of consumer information. All broadband providers are also obliged by CALEA to configure their networks in a manner that facilitates the ability of state and federal law enforcement, with proper legal process authorized under the Electronic Communications Privacy Act, to obtain records and information concerning our customers, including the content of their communications. Further, the FCC, Federal Trade Commission ("FTC"), and many states regulate and restrict the marketing practices of communications service providers, including telemarketing and sending unsolicited commercial emails. The FTC currently has the authority, pursuant to its general authority to enforce against unfair or deceptive acts and practices, to protect the privacy of Internet service customers, including our use and disclosure of certain customer information.

Our operations are also subject to federal and state laws governing information security. In the event of an information security breach, such rules may require consumer and government agency notification and may result in regulatory enforcement actions with the potential of monetary forfeitures. The FCC, the FTC and state attorneys general regularly bring enforcement actions against companies related to information security breaches and privacy violations.

Various security standards provide guidance to telecommunications companies in order to help identify and mitigate cybersecurity risks. One such standard is the voluntary framework released by the National Institute for Standards and Technology (“NIST”) in 2014 and updated in 2018, in cooperation with other federal agencies and owners and operators of U.S. critical infrastructure. The NIST cybersecurity framework provides a prioritized and flexible model for organizations to identify and manage cyber risks inherent to their business. It was designed to supplement, not supersede, existing cybersecurity regulations and requirements. Several government agencies have encouraged compliance with the NIST cybersecurity framework, including the FCC and Department of Homeland Security’s Cybersecurity and Infrastructure Security Agency (“CISA”). We voluntarily follow NIST as part of our overall cybersecurity program. The FCC is considering expansion of its cybersecurity guidelines or the adoption of cybersecurity requirements. CISA is also developing cyber incident reporting rules, pursuant to 2022 legislative requirements, that require critical infrastructure entities to report substantial cyber incidents within 72 hours of their discovery.

Many states and local authorities have considered legislative or other actions that would impose restrictions on our ability to collect, use and disclose, and safeguard certain consumer information, particularly with regard to our broadband Internet business. For example, the California Consumer Privacy Act (“CCPA”) and Maine’s Act to Protect Privacy of Online Customer Information both became effective in 2020. The CCPA, under certain circumstances, regulates companies’ use and disclosure of the personal information of California residents and authorizes enforcement actions by the California Attorney General and private class actions for data breaches. In addition, effective January 1, 2023, the California Consumer Privacy Rights Act (“CPRA”) amended CCPA to impose additional obligations on companies that handle the personal information of California residents. The Maine law regulates how Internet service providers use and disclose customers’ personal information and requires Internet service providers to take reasonable measures to protect customers’ personal information. Virginia’s new privacy law became effective on January 1, 2023, and Colorado and Connecticut’s new privacy laws will become effective later in 2023. Each of these laws will regulate the way that companies collect, use, and share personal information about consumers. Several other state legislatures are considering the adoption of new data security and cybersecurity legislation that could result in additional network and information security requirements for our business. The FTC has launched an Advance Notice of Proposed Rulemaking (“ANPR”) to explore rules related to the collection, analysis, and monetization of consumers’ information. Congress may also adopt new privacy and data security obligations. We cannot predict whether any of these efforts will be successful or preempted, or how new legislation and regulations, if any, would affect our business.

Remaining Commitments Related to the 2016 Merger with TWC and Acquisition of Bright House

In connection with approval of the 2016 merger with TWC and acquisition of Bright House (the “Transactions”), federal and state regulators imposed a number of post-transaction conditions on us, many of which have been fulfilled or have terminated. Remaining federal commitments will expire in 2023 and include the following.

FCC Conditions

- Refrain from charging usage-based prices or imposing data caps on any fixed mass market broadband Internet access service plans for seven years; and
- Continue to support CableCARDs for use in third-party retail devices for seven years to the extent applicable following the FCC’s modification of the relevant rules in 2020.

The FCC conditions also contain a number of compliance reporting requirements.

DOJ Conditions

The DOJ Order prohibits us from entering into or enforcing any agreement with a video programmer that forbids, limits or creates incentives to limit the video programmer’s provision of content to online video distributors (“OVDs”). We will not be able to avail ourselves of other distributors’ most favored nation (“MFN”) provisions if they are inconsistent with this prohibition. The DOJ’s conditions are effective for seven years after entry of the final judgment in September 2016.

Human Capital Management

As of December 31, 2022, we had approximately 101,700 active full-time equivalent employees. The vast majority of our employees sell or service our products. We believe that attracting, developing and retaining our highly-skilled workforce is critical to successfully executing our operating strategy. With competitive wages, robust and affordable healthcare benefits, a generous retirement program with company match, and opportunities for job training and advancement, our employees develop skills and expertise necessary to build a long and successful career with us. In addition, the diversity of the communities we serve is reflected in our workforce, and our success in serving these communities requires a commitment to diversity and inclusion in every aspect of our business. We value the unique backgrounds, perspectives, and experiences of our employees. Embracing these differences brings us together for the common mission of exceeding our customers' needs. There are several ways in which we attract, develop, and retain highly qualified talent, including:

Pay and Benefits

- We provide compensation packages that are market competitive, taking into account the location and responsibilities of the role.
- All hourly employees have a starting minimum wage of at least \$20 per hour, which is well above any state or federal minimum wage level.
- Nearly 85% of our employees are eligible for additional variable compensation based on their performance (e.g., annual performance bonus or sales commission).
- We offer enhanced career progression opportunities, including annual bonus eligibility for all frontline supervisors and other salaried employees not already on a commission or bonus plan.
- We provide high-quality, comprehensive medical, dental, and vision coverage for all full-time and part-time employees. It is our priority to keep this coverage affordable for our employees and their families, and so for the last ten years, we have absorbed the full premium cost increase for medical, dental, and vision coverage.
- We provide competitive financial benefits to all employees such as a 401(k) retirement plan with a dollar for dollar company match up to 6% of their eligible pay. In addition, most of our employees are also eligible to receive an additional non-elective contribution equal to 3% of their eligible pay.
- We have a stock incentive plan and grant equity awards to eligible employees on an annual basis.

Training and Development

- The substantial skills, experience and industry knowledge of our employees and our training of our customer-facing employees benefit our operations and performance. We offer thousands of learning experiences spanning leadership development, new hire, and professional skills training both online and in the classroom.
- In 2022, we increased our education assistance benefit to provide reimbursement of up to \$10,000 per year.
- The vast majority of our customer-facing roles have the opportunity for upward advancement including through supervisory and leadership roles. Our Field Operations organization has a formalized self-progression structure where employees who maintain exceptional levels of performance can complete online coursework to advance to next level within their job family.
- Our Broadband Technician Apprenticeship Program is one of our promising strategies for building our skilled workforce. This program, certified by the U.S. Department of Labor, is aligned with our broadband technician career progression and includes thousands of hours of on-the-job training along with classroom instruction. When enrolled employees complete the program, they become certified broadband technicians.
- We conduct annual talent planning to review the overall performance of our leaders and their potential to serve in larger, more complex roles. Executive leadership reviews the results of talent conversations, which open possibilities for career growth opportunities and cross-organizational movement.

Diversity and Inclusion

- We are committed to diversity and inclusion in every aspect of our business. We strive to deliver high quality products and services that exceed our customers' expectations, and embrace the unique perspectives and experiences of our employees and partners and the communities we serve.
- We have five Business Resource Groups ("BRGs") focused on people with disabilities, the LGBTQ community, employees with multicultural backgrounds, veterans and women. These voluntary groups connect employees with shared characteristics, life experiences, and interests, and enable them to engage in activities that advance our culture of inclusion and contribute to business success. Our BRGs have empowered our team members to grow and succeed by providing networking, mentorship and skill-building opportunities.

Item 1A. Risk Factors.

Risks Related to Our Business

We operate in a very competitive business environment, which affects our ability to attract and retain customers and can adversely affect our business, operations and financial results.

The industry in which we operate is highly competitive and has become more so in recent years. In some instances, we compete against companies with fewer regulatory burdens, access to better financing and greater and more favorable brand name recognition. Increasing consolidation in the telecommunications and content industries have provided additional benefits to certain of our competitors, either through access to financing, resources, or efficiencies of scale including the ability to launch new video services.

Our Internet service faces competition from other companies' FTTH, fixed wireless broadband, Internet delivered via satellite and DSL services. Various operators offer wireless Internet services delivered over networks which they continue to enhance to deliver faster speeds and also continue to expand 5G mobile services. Our voice and mobile services compete with wireless and wireline phone providers, as well as other forms of communication, such as text, instant messaging, social networking services, video conferencing and email. Competition from these companies, including intensive marketing efforts with aggressive pricing and exclusive programming, may have an adverse impact on our ability to attract and retain customers.

Our video service faces competition from a number of sources, including DBS services, and companies that deliver linear network programming, movies and television shows on demand and other video content over broadband Internet connections to televisions, computers, tablets and mobile devices often with password sharing among multiple users and security that makes content susceptible to piracy. Newer products and services, particularly alternative methods for the distribution, sale and viewing of content will likely continue to be developed, further increasing the number of competitors that we face.

The increasing number of choices available to audiences, including low-cost or free choices, could negatively impact not only consumer demand for our products and services, but also advertisers' willingness to purchase advertising from us. We compete for the sale of advertising revenue with television networks and stations, as well as other advertising platforms, such as online media, radio and print. Competition related to our service offerings to businesses continues to increase as well, as more companies deploy more fiber to more buildings, which may negatively impact our growth and put pressure on margins.

A failure to effectively anticipate or adapt to new technologies and changes in customer expectations and behavior could significantly adversely affect our competitive position with respect to the leisure time and discretionary spending of our customers and, as a result, affect our business and results of operations. Competition may also reduce our expected growth of future cash flows which may contribute to future impairments of our franchises and goodwill and our ability to meet cash flow requirements, including debt service requirements. For additional information regarding the competition we face, see "Item 1. Business -Competition" and "-Regulation and Legislation."

We depend on third-party service providers, suppliers and licensors; thus, if we are unable to procure the necessary services, equipment, software or licenses on reasonable terms and on a timely basis, our ability to offer services could be impaired, and our growth, operations, business, financial results and financial condition could be materially adversely affected.

We depend on a limited number of third-party service providers, suppliers and licensors to supply some of the services, hardware, software and operational support necessary to provide some of our services and execute our network evolution and rural construction initiatives. Some of our hardware, software and operational support vendors, and service providers represent our sole source of supply or have, either through contract or as a result of intellectual property rights, a position of some exclusivity. Our ability to provide some services and complete our network evolution and rural construction initiatives might be materially adversely affected, or the need to procure or develop alternative sources of the affected materials or services might interrupt or delay our ability to serve existing and new customers, if any of these parties experience or engage in the following:

- breach or terminate or elect not to renew their agreements with us or otherwise fail to perform their obligations in a timely manner;
- demand exceeds these vendors' capacity;
- tariffs are imposed that impact vendors' ability to perform their obligations or significantly increase the amount we pay;
- experience operating or financial difficulties;

- significantly increase the amount we are required to pay (including demands for substantial non-monetary compensation) for necessary products or services; or
- cease production of any necessary product due to lack of demand, profitability or a change in ownership or are otherwise unable to provide the equipment or services we need in a timely manner at our specifications and at reasonable prices.

Our third-party service providers, suppliers and licensors have been disrupted by worker absenteeism, quarantines, restrictions on employees' ability to work, office and factory closures, disruptions to ports and other shipping infrastructure, border closures, or other travel or health-related restrictions over the last three years. In addition, the existence of only a limited number of vendors of key technologies can lead to less product innovation and higher costs. These events could materially and adversely affect our ability to retain and attract customers and our operations, business, financial results and financial condition.

We may not have the ability to pass on to our customers all of the increases in programming costs, which could adversely affect our cash flow and operating margins.

Programming costs are our single largest expense item. Our programming costs have historically increased in excess of customary inflationary and cost-of-living type increases. While decreases in video customers combined with a change in the mix of customers choosing lower cost packages have lowered total programming cost increases, we expect contractual programming rates per service subscriber to continue to increase as a result of annual increases pursuant to our programming contracts and contract renewals with programmers. Although we pass along amounts paid for local broadcast station retransmission consent to the majority of our customers, the inability to fully pass programming cost increases on to our customers has had, and is expected in the future to have, an adverse impact on our cash flow and operating margins associated with the video product. Additionally, the demands of large media companies, with additional selling power as a result of media and broadcast station groups consolidation, who link carriage of their most popular networks to carriage and cost increases of their less popular networks, and require us to carry their most popular networks to a large percentage of our video subscribers, have limited our flexibility in selling more tailored and cost-sensitive programming packages for consumers. In order to mitigate impacts to our operating margins due to increasing programming rates, we continue to review our pricing and programming packaging strategies.

Increases in the cost of sports programming and the amounts paid for local broadcast station retransmission consent have been the largest contributors to the growth in our programming costs over the last few years. Federal law allows commercial television broadcast stations to make an election between "must-carry" rights and an alternative "retransmission-consent" regime. When a station opts for the retransmission consent regime, we are not allowed to carry the station's signal without that station's permission. In retransmission-consent negotiations, broadcasters often condition consent with respect to one station on carriage of one or more other stations or programming services in which they or their affiliates have an interest. Carriage of these other services, as well as increased fees for retransmission rights, may increase our programming expenses and diminish the amount of capacity we have available to introduce new services, which could have an adverse effect on our business and financial results.

Our programming contracts are generally for a fixed period of time, with potentially significant spend subject to negotiated renewal in any particular year. We will seek to renew these agreements on terms that we believe are favorable. There can be no assurance that these agreements will be renewed on favorable or comparable terms. To the extent that we are unable to reach agreement with certain programmers on terms that we believe are reasonable, we have been, and may in the future be, forced to remove such programming channels from our line-up, which may result in a loss of customers. Any failure to carry programming that is attractive to our customers could adversely impact our customer levels, operations and financial results.

Any failure to respond to technological developments and meet customer demand for new products and services could adversely affect our ability to compete effectively.

We operate in a highly competitive, consumer-driven and rapidly changing environment. From time to time, we may pursue strategic initiatives to launch products or enhancements to our products. Our success is, to a large extent, dependent on our ability to acquire, develop, adopt, upgrade and exploit new and existing technologies to address consumers' changing demands and distinguish our services from those of our competitors. We may not be able to accurately predict technological trends or the success of new products and services. If we choose technologies or equipment that are less effective, cost-efficient or attractive to customers than those chosen by our competitors, if technologies or equipment on which we have chosen to rely cease to be available to us on reasonable terms or conditions, if we offer services that fail to appeal to consumers, are not available at competitive prices or that do not function as expected, if we are not able to fund the expenditures necessary to keep pace with technological developments, or if we are no longer able to make our services available to our customers on a third-

party device on which a substantial number of customers have relied to access our services, our competitive position could deteriorate, and our business and financial results could suffer.

The ability of some of our competitors to introduce new technologies, products and services more quickly than we do may adversely affect our competitive position. Furthermore, advances in technology, decreases in the cost of existing technologies or changes in competitors' product and service offerings may require us in the future to make additional research and development expenditures or to offer, at no additional charge or at a lower price, certain products and services that we currently offer to customers separately or at a premium. In addition, the uncertainty of our ability, and the costs, to obtain intellectual property rights from third parties could impact our ability to respond to technological advances in a timely and effective manner.

Any failure to maintain and expand our upgraded systems and provide advanced services in a timely manner, or to anticipate the demands of the marketplace, could materially adversely affect our ability to attract and retain customers. In addition, as we continue to grow our mobile services using virtual network operator rights from a third party, we expect continued growth-related sales and marketing and other customer acquisition costs as well as negative working capital impacts from the timing of device-related cash flows when we provide devices pursuant to equipment installation plans. We also continue to consider and pursue opportunities in the mobile space which may include the acquisition of additional licensed spectrum and may include entering into or expanding joint ventures or partnerships with wireless or cable providers which may require significant investment. For example, we now hold CBRS PALs to support existing and future mobile services. These licenses are subject to revocation and expiration. Although we expect to be able to maintain and renew these licenses, the loss of one or more licenses could significantly impair our ability to offload mobile traffic and achieve cost reductions. If we are unable to continue to grow our mobile business and achieve the outcomes we expect from our investments in the mobile business, our growth, financial condition and results of operations could be adversely affected.

Our business may be adversely affected if we cannot continue to license or enforce the intellectual property rights on which our business depends.

We rely on patent, copyright, trademark and trade secret laws and licenses and other agreements with our employees, customers, suppliers and other parties to establish and maintain our intellectual property rights in technology and the products and services used in our operations. Also, because of the rapid pace of technological change, we both develop our own technologies, products and services and rely on technologies developed or licensed by third parties. However, any of our intellectual property rights, or the rights of our suppliers, could be challenged or invalidated, or such intellectual property rights may not be sufficient to permit us to take advantage of current industry trends or otherwise to provide competitive advantages, which could result in costly redesign efforts, discontinuance of certain product or service offerings or other competitive harm. We may not be able to obtain or continue to obtain licenses from these third parties on reasonable terms, if at all. In addition, claims of intellectual property infringement could require us to enter into royalty or licensing agreements on unfavorable terms, incur substantial monetary liability or be enjoined preliminarily or permanently from further use of the intellectual property in question, which could require us to change our business practices or offerings and limit our ability to compete effectively. Even unsuccessful claims can be time-consuming and costly to defend and may divert management's attention and resources away from our business. Infringement claims continue to be brought frequently in the communications and entertainment industries, and we are also often a party to such litigation alleging that certain of our services or technologies infringe the intellectual property rights of others.

Various events could disrupt or result in unauthorized access to our networks, information systems or properties and could impair our operating activities and negatively impact our reputation and financial results.

Network and information systems technologies are critical to our operating activities, both for our internal uses, such as network management, and supplying services to our customers, including customer service operations and programming delivery. Network or information system shutdowns or other service disruptions caused by events such as computer hacking, phishing, dissemination of computer viruses, worms and other destructive or disruptive software, "cyber attacks" such as ransomware, process breakdowns, denial of service attacks and other malicious activity pose increasing risks. Both unsuccessful and successful "cyber attacks" on companies have continued to increase in frequency, scope and potential harm in recent years. While we develop and maintain systems seeking to prevent systems-related events and security breaches from occurring, the development and maintenance of these systems is costly and requires ongoing monitoring and updating as techniques used in such attacks become more sophisticated and change frequently. We, and the third parties on which we rely, may be unable to anticipate these techniques or implement adequate preventive measures. While from time to time attempts

have been made to access our network, these events have not as yet resulted in any material release of information, degradation or disruption to our network and information systems.

Our network and information systems are also vulnerable to damage or interruption from power outages, telecommunications failures, accidents, natural disasters (including extreme weather arising from short-term or any long-term changes in weather patterns), terrorist attacks and similar events. Our system redundancy may be ineffective or inadequate, and our disaster recovery planning may not be sufficient for all eventualities.

Any of these events, if directed at, or experienced by, us or technologies upon which we depend, could have adverse consequences on our network, our customers and our business, including degradation of service, service disruption, excessive call volume to call centers, and damage to our or our customers' equipment and data. Large expenditures may be necessary to repair or replace damaged property, networks or information systems or to protect them from similar events in the future. Moreover, the amount and scope of insurance that we maintain against losses resulting from any such events or security breaches may not be sufficient to cover our losses or otherwise adequately compensate us for any disruptions to our business that may result. Any such significant service disruption could result in damage to our reputation and credibility, customer dissatisfaction and ultimately a loss of customers or revenue. Any significant loss of customers or revenue, or significant increase in costs of serving those customers, could adversely affect our growth, financial condition and results of operations.

Furthermore, our operating activities could be subject to risks caused by misappropriation, misuse, leakage, falsification or accidental release or loss of information maintained in our information technology systems and networks and those of our third-party vendors, including customer, personnel and vendor data. We provide certain confidential, proprietary and personal information to third parties in connection with our business, and there is a risk that this information may be compromised.

We process, store, and transmit large amounts of data, including the personal information of our customers. Ongoing increases in the potential for misuse of personal information, the public's awareness of the importance of safeguarding personal information, and the volume of legislation that has been adopted or is being considered regarding the protection, privacy, and security of personal information have resulted in increases to our information-related risks. We could be exposed to significant costs if such risks were to materialize, and such events could damage our reputation, credibility and business and have a negative impact on our revenue. We could be subject to regulatory actions and claims made by consumers in private litigations involving privacy issues related to consumer data collection and use practices. We also could be required to expend significant capital and other resources to remedy any such security breach.

Our exposure to the economic conditions of our current and potential customers, vendors and third parties could adversely affect our cash flow, results of operations and financial condition.

We are exposed to risks associated with the economic conditions of our current and potential customers, the potential financial instability of our customers and their financial ability to purchase our products. If there were a prolonged general economic downturn, we may experience increased cancellations or non-payment by our customers or unfavorable changes in the mix of products purchased. This may include an increase in the number of homes that replace their video service with Internet-delivered and/or over-air content, as well as an increase in the number of Internet and voice customers substituting mobile data and voice products for wireline services, which would negatively impact our ability to attract customers, increase rates and maintain or increase revenue. In addition, our ability to gain new customers is dependent to some extent on growth in occupied housing in our service areas, which is influenced by both national and local economic conditions. Weak economic conditions may also have a negative impact on our advertising revenue. These events have adversely affected us in the past, and may adversely affect our cash flow, results of operations and financial condition if a downturn were to continue.

In addition, we are susceptible to risks associated with the potential financial instability of the vendors and third parties on which we rely to provide products and services or to which we outsource certain functions. The same economic conditions that may affect our customers, as well as volatility and disruption in the capital and credit markets, also could adversely affect vendors and third parties and lead to significant increases in prices, reduction in output or the bankruptcy of our vendors or third parties upon which we rely. Any interruption in the services provided by our vendors or by third parties could adversely affect our cash flow, results of operation and financial condition.

If we are unable to retain key employees, our ability to manage our business could be adversely affected.

Our operational results have depended, and our future results will depend, upon the retention and continued performance of our management team. Our ability to retain and hire new key employees for management positions could be impacted adversely by the competitive environment for management talent in the broadband communications and technology industries. The loss of

the services of key members of management and the inability or delay in hiring new key employees could adversely affect our ability to manage our business and our future operational and financial results.

Risks Related to Our Indebtedness

We have a significant amount of debt and expect to incur significant additional debt, including secured debt, in the future, which could adversely affect our financial condition and our ability to react to changes in our business.

We have a significant amount of debt and expect to (subject to applicable restrictions in our debt instruments) incur additional debt in the future as we maintain our stated objective of 4.0 to 4.5 times Adjusted EBITDA leverage (net debt divided by the last twelve months Adjusted EBITDA). As of December 31, 2022, our total principal amount of debt was approximately \$97.4 billion with a leverage ratio of 4.47 times Adjusted EBITDA. As of December 31, 2022, \$70.7 billion of our debt was rated investment grade and \$26.7 billion was rated high yield debt. This split rating allows us to access both the investment grade debt market and the high yield debt market.

Our significant amount of debt could have consequences, such as:

- impact our ability to raise additional capital at reasonable rates, or at all;
- make us vulnerable to interest rate increases, in part because approximately 15% of our borrowings as of December 31, 2022 were, and may continue to be, subject to variable rates of interest;
- expose us to increased interest expense to the extent we refinance existing debt with higher cost debt;
- require us to dedicate a significant portion of our cash flow from operating activities to make payments on our debt, reducing our funds available for working capital, capital expenditures, and other general corporate expenses;
- limit our flexibility in planning for, or reacting to, changes in our business, the cable and telecommunications industries, and the economy at large;
- place us at a disadvantage compared to our competitors that have proportionately less debt; and
- adversely affect our relationship with customers and suppliers.

To the extent our current debt amounts increase more than expected, our business results are lower than expected, or credit rating agencies downgrade our debt limiting our access to investment grade markets, the related risks that we now face will intensify.

In addition, a portion of our variable rate indebtedness may use London Interbank Offering Rate ("LIBOR") as a benchmark for establishing the rate. The United Kingdom's Financial Conduct Authority, which regulates LIBOR, stopped publishing one week and 2 month U.S. Dollar ("USD") LIBOR rates after 2021 with remaining USD LIBOR rates ceasing to be published after June 30, 2023. In the United States, the U.S. Federal Reserve, in conjunction with the Alternative Reference Rates Committee, a steering committee comprised of large U.S. financial institutions, has proposed the Secured Overnight Financing Rate ("SOFR"), a new index calculated by short-term repurchase agreements backed by Treasury securities, as an alternative to LIBOR. In addition, the overall financial markets may be disrupted as a result of the phase-out or replacement of LIBOR. Uncertainty as to the nature of such phase out and selection of an alternative reference rate, together with disruption in the financial markets, could increase the cost of our variable rate indebtedness.

As a result of the pending cessation of LIBOR, we amended the Charter Operating credit agreement to replace LIBOR with SOFR as the interest rate benchmark for the revolving credit facility and certain of the term loans thereunder. SOFR may fluctuate based on general economic conditions, general interest rates, Federal Reserve rates and the supply of and demand for credit in the market.

The agreements and instruments governing our debt contain restrictions and limitations that could significantly affect our ability to operate our business, as well as significantly affect our liquidity.

The indentures governing the CCO Holdings, LLC ("CCO Holdings") notes contain a number of significant covenants that could adversely affect our ability to operate our business, our liquidity, and our results of operations. These covenants restrict, among other things, CCO Holdings, CCO Holdings Capital Corp. and all of their restricted subsidiaries' ability to:

- incur additional debt;
- pay dividends on equity or repurchase equity;
- make investments;
- sell all or substantially all of their assets or merge with or into other companies;

- sell assets;
- in the case of restricted subsidiaries, create or permit to exist dividend or payment restrictions with respect to CCO Holdings, guarantee their parent companies debt, or issue specified equity interests;
- engage in certain transactions with affiliates; and
- grant liens (with respect to only CCO Holdings).

Additionally, the Charter Operating credit facilities require Charter Operating to comply with a maximum total leverage covenant and a maximum first lien leverage covenant. The Charter Operating credit facilities, the Charter Operating notes, the TWC, LLC senior notes and debentures, and the TWCE debentures include customary negative covenants, including restrictions on the ability to incur liens securing indebtedness for borrowed money and consolidating, merging or conveying or transferring substantially all of the respective obligor's assets. The breach of any covenants or obligations in our indentures or credit facilities, not otherwise waived or amended, could result in a default under the applicable debt obligations and could trigger acceleration of those obligations, which in turn could trigger cross defaults under other agreements governing our long-term indebtedness. In addition, the secured lenders under our secured notes and the Charter Operating credit facilities could foreclose on their collateral, which includes equity interests in substantially all of our subsidiaries, and exercise other rights of secured creditors.

Risks Related to Ownership Position of Liberty Broadband Corporation and Advance/Newhouse Partnership

Liberty Broadband Corporation ("Liberty Broadband") and Advance/Newhouse Partnership ("A/N") have governance rights that give them influence over corporate transactions and other matters.

Liberty Broadband currently owns a significant amount of Charter Class A common stock and is entitled to certain governance rights with respect to Charter. A/N currently owns Charter Class A common stock and a significant amount of membership interests in our subsidiary Charter Holdings, which are convertible into Charter Class A common stock, and is entitled to certain governance rights with respect to Charter. Members of the Charter board of directors include a director who is also an officer and director of Liberty Broadband and directors who are current or former officers and directors of A/N. Mr. Greg Maffei is the President and Chief Executive Officer of Liberty Broadband. Steven Miron is the Chief Executive Officer of A/N and Michael Newhouse is co-president of the parent of A/N and its affiliates. As of December 31, 2022, Liberty Broadband beneficially held approximately 27.64% of Charter's voting stock and A/N beneficially held approximately 12.48% of Charter's voting stock. Pursuant to the Amended and Restated Stockholders Agreement among Charter, Liberty Broadband and A/N, dated as of May 23, 2015 (as amended, the "Stockholders Agreement"), Liberty Broadband currently has the right to designate up to three directors as nominees for Charter's board of directors and A/N currently has the right to designate up to two directors as nominees for Charter's board of directors. Each of A/N and Liberty Broadband is entitled to nominate at least one director to each of the committees of Charter's board of directors, subject to applicable stock exchange listing rules and certain specified voting or equity ownership thresholds for each of A/N and Liberty Broadband, and provided that the Nominating and Corporate Governance Committee and the Compensation and Benefit Committee each have at least a majority of directors independent from A/N, Liberty Broadband and Charter (referred to as the "unaffiliated directors" in the Stockholders Agreement).

The Stockholders Agreement and Charter's amended and restated certificate of incorporation fixes the size of the board at 13 directors. Liberty Broadband and A/N are required to vote (subject to the applicable voting cap) their respective shares of Charter Class A common stock and Charter Class B common stock for the director nominees nominated by the nominating and corporate governance committee of the board of directors, including the respective designees of Liberty Broadband and A/N, and against any other nominees, except that, with respect to the unaffiliated directors, Liberty Broadband and A/N must instead vote in the same proportion as the voting securities are voted by stockholders other than A/N and Liberty Broadband or any group which includes any of them are voted, if doing so would cause a different outcome with respect to the unaffiliated directors. As a result of their rights under the Stockholders Agreement and their significant equity and voting stakes in Charter, Liberty Broadband and/or A/N, who may have interests different from those of other stockholders, will be able to exercise substantial influence over certain matters relating to the governance of Charter, including the approval of significant corporate actions, such as mergers and other business combination transactions.

The Stockholders Agreement provides A/N and Liberty Broadband with preemptive rights with respect to issuances of Charter equity in connection with certain transactions, and in the event that A/N or Liberty Broadband exercises these rights, holders of Charter Class A common stock may experience further dilution.

The Stockholders Agreement provides that A/N and Liberty Broadband will have certain contractual preemptive rights over issuances of Charter equity securities in connection with capital raising transactions. Holders of Charter Class A common stock will not be entitled to similar preemptive rights with respect to such transactions. As a result, if Liberty Broadband and/or A/N

elect to exercise their preemptive rights, (i) these parties would not experience the dilution experienced by the other holders of Charter Class A common stock, and (ii) such other holders of Charter Class A common stock may experience further dilution of their interest in Charter upon such exercise.

Risks Related to Regulatory and Legislative Matters

Our business is subject to extensive governmental legislation and regulation, which could adversely affect our business.

Regulation of the cable industry has increased cable operators' operational and administrative expenses and limited their revenues. Cable operators are subject to numerous laws and regulations including those covering the following:

- the provision of high-speed Internet service, including net neutrality and broadband label transparency rules;
- the provision of voice communications, including rules for emergency communications, outage reporting, Customer Proprietary Network Information ("CPNI") reporting and efforts to limit unwanted robocalls;
- cable franchise renewals and transfers;
- the provisioning, marketing and billing of cable and Internet equipment;
- customer and employee privacy and data security;
- copyright royalties for retransmitting broadcast signals;
- the circumstances when a cable system must carry a broadcast station and the circumstances when it first must obtain retransmission consent to carry a broadcast station;
- limitations on our ability to enter into exclusive agreements with multiple dwelling unit complexes and control our inside wiring;
- equal employment opportunity;
- the resiliency of our networks to maintain service during and after disasters and power outages;
- emergency alert systems, disability access, pole attachments, commercial leased access and technical standards;
- marketing practices, customer service, and consumer protection; and
- approval for mergers and acquisitions often accompanied by the imposition of restrictions and requirements on an applicant's business in order to secure approval of the proposed transaction.

Legislators and regulators at all levels of government frequently consider changing, and sometimes do change, existing statutes, rules, regulations, or interpretations thereof, or prescribe new ones. Any future legislative, judicial, regulatory or administrative actions may increase our costs or impose additional restrictions on our businesses.

Changes to existing statutes, rules, regulations, or interpretations thereof, or adoption of new ones, or participation in new regulatory programs, could have an adverse effect on our business.

There are ongoing efforts to amend or expand the federal, state, and local regulation of some of the services offered over our cable systems, particularly our retail broadband Internet access service. Potential legislative and regulatory changes could adversely impact our business by increasing our costs and competition and limiting our ability to offer services in a manner that would maximize our revenue potential. These changes could include, for example, the reclassification of Internet services as regulated telecommunications services or other utility-style regulation of Internet services; restrictions on how we manage our Internet access services and networks; the adoption of new privacy restrictions on our collection, use and disclosure of certain customer information; new data security and cybersecurity mandates that could result in additional network and information security and cyber incident reporting requirements for our business; new restraints on our discretion over programming decisions; new restrictions on the rates we charge to consumers for one or more of the services or equipment options we offer; changes to the cable industry's compulsory copyright license to carry broadcast signals; new requirements to assure the availability of navigation devices from third-party providers; new Universal Service Fund contribution obligations on our Internet service revenues that would add to the cost of that service; increases in government-administered broadband subsidies to rural areas that could result in subsidized overbuilding of our facilities; the exhaustion of funding for the FCC's ACP or any changes to that program that could make it more difficult for us to provide services to low-income consumers; changes to the FCC's administration of spectrum; pending court challenges to the legality of the FCC's Universal Service programs, which, if successful, could adversely affect our receipt of universal service funds, including but not limited to FCC RDOF grants to expand our network, FCC E-rate funds to serve schools and libraries and FCC Rural Health Care funds to serve eligible health care providers; and changes in the regulatory framework for VoIP telephone service, including the scope of regulatory obligations associated with our VoIP telephone service and our ability to interconnect our VoIP telephone service with incumbent providers of traditional telecommunications service.

As a winning bidder in the FCC's RDOF auction in 2020, we must comply with numerous FCC and state requirements to continue receiving such funding. To comply with these requirements, in RDOF areas, we have chosen to offer certain of our VoIP telephone services, such as our Lifeline services, subject to certain traditional federal and state common carrier regulations. Additionally, in some areas where we are building pursuant to subsidy programs, we will offer certain of our broadband Internet access services subject to required discounts and other marketing-related terms. If we fail to comply with those requirements, the governing regulatory agency could consider us in default and we could incur substantial penalties or forfeitures. If we fail to attain certain specified infrastructure build-out requirements under the RDOF program, the FCC could also withhold future support payments until those shortcomings are corrected. Any failure to comply with the rules and requirements of a subsidy grant could result in us being suspended or disbarred from future governmental programs or contracts for a significant period of time, which could adversely affect our results of operations and financial condition.

If any laws or regulations are enacted that would expand the regulation of our services, they could affect our operations and require significant expenditures. We cannot predict future developments in these areas, and any changes to the regulatory framework for our Internet, video, mobile or VoIP services could have a negative impact on our business and results of operations.

It remains uncertain what rule changes, if any, will ultimately be adopted by Congress, the FCC and state legislatures, and what operating or financial impact any such rules might have on us, including on the operation of our broadband networks, customer privacy and the user experience. In addition, the FCC, the FTC, and various state agencies and attorney generals actively investigate industry practices and could impose substantial forfeitures for alleged regulatory violations.

Tax legislation and administrative initiatives or challenges to our tax and fee positions could adversely affect our results of operations and financial condition.

We operate cable systems in locations throughout the United States and, as a result, we are subject to the tax laws and regulations of federal, state and local governments. From time to time, legislative and administrative bodies change laws and regulations that change our effective tax rate or tax payments. Certain states and localities have imposed or are considering imposing new or additional taxes or fees on our services or changing the methodologies or base on which certain fees and taxes are computed. Potential changes include additional taxes or fees on our services which could impact our customers, changes to income tax sourcing rules and other changes to general business taxes, central/unit-level assessment of property taxes and other matters that could increase our income, franchise, sales, use and/or property tax liabilities. In addition, federal, state and local tax laws and regulations are extremely complex and subject to varying interpretations. There can be no assurance that our tax positions will not be challenged by relevant tax authorities or that we would be successful in any such challenge.

Our cable system franchises are subject to non-renewal or termination and are non-exclusive. The failure to renew a franchise or the grant of additional franchises in one or more service areas could adversely affect our business.

Our cable systems generally operate pursuant to franchises, permits, and similar authorizations issued by a state or local governmental authority controlling the public rights-of-way. Many franchises establish comprehensive facilities and service requirements, as well as specific customer service standards and monetary penalties for non-compliance. In many cases, franchises are terminable if the franchisee fails to comply with significant provisions set forth in the franchise agreement governing system operations. Franchises are generally granted for fixed terms and must be periodically renewed. Franchising authorities may resist granting a renewal if either past performance or the prospective operating proposal is considered inadequate. Franchise authorities often demand concessions or other commitments as a condition to renewal. In some instances, local franchises have not been renewed at expiration, and we have operated and are operating under either temporary operating agreements or without a franchise while negotiating renewal terms with the local franchising authorities.

We cannot assure you that we will be able to comply with all significant provisions of our franchise agreements and certain of our franchisors have from time to time alleged that we have not complied with these agreements. Additionally, although historically we have renewed our franchises without incurring significant costs, we cannot assure you that we will be able to renew, or to renew as favorably, our franchises in the future. A termination of or a sustained failure to renew a franchise in one or more service areas could adversely affect our business in the affected geographic area.

Our cable system franchises are non-exclusive. Consequently, local and state franchising authorities can grant additional franchises to competitors in the same geographic area or operate their own cable systems. In some cases, local government entities and municipal utilities may legally compete with us on more favorable terms.

Item 1B. *Unresolved Staff Comments.*

None.

Item 2. *Properties.*

Our principal physical assets consist of cable distribution plant and equipment, including signal receiving, encoding and decoding devices, headend reception facilities, distribution systems, and customer premise equipment for each of our cable systems.

Our cable plant and related equipment are generally attached to utility poles under pole rental agreements with local public utilities and telephone companies, and in certain locations are buried in underground ducts or trenches. We own or lease real property for signal reception sites, and own our service vehicles.

We generally lease space for business offices. Our headend and tower locations are located on owned or leased parcels of land, and we generally own the towers on which our equipment is located.

The physical components of our cable systems require maintenance as well as periodic upgrades to support the new services and products we introduce. See “Item 1. Business – Our Network Technology.” We believe that our properties are generally in good operating condition and are suitable for our business operations.

Item 3. *Legal Proceedings.*

The legal proceedings information set forth in Note 20 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data” in this Annual Report on Form 10-K is incorporated herein by reference.

Item 4. *Mine Safety Disclosures.*

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Charter's Class A common stock is listed on the NASDAQ Global Select Market under the symbol "CHTR." As of December 31, 2022, there were approximately 10,000 holders of record of Charter's Class A common stock and one holder of Charter's Class B common stock. Charter has not paid cash dividends on its common stock and does not intend to do so in the foreseeable future. During 2022, there were no unregistered sales of securities of the registrant.

Securities Authorized for Issuance Under Equity Compensation Plans

The following information is provided as of December 31, 2022 with respect to equity compensation plans:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted Average Exercise Price of Outstanding Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by security holders	10,445,568 ⁽¹⁾	\$ 414.84	10,478,392 ⁽¹⁾
Equity compensation plans not approved by security holders	—	\$ —	—
TOTAL	10,445,568 ⁽¹⁾		10,478,392 ⁽¹⁾

⁽¹⁾ This total does not include 6,845 shares issued pursuant to restricted stock grants made under our 2019 Stock Incentive Plan, which are subject to vesting based on continued service.

For information regarding securities issued under our equity compensation plans, see Note 16 to our accompanying consolidated financial statements contained in "Part II. Item 8. Financial Statements and Supplementary Data."

Performance Graph

The performance graph required by Item 5 will be included in Charter's 2023 Proxy Statement (the "Proxy Statement") under the headings "Compensation Discussion and Analysis," or in amendment to this Annual Report on Form 10-K and is incorporated herein by reference.

Purchases of Equity Securities by the Issuer

The following table presents Charter's purchases of equity securities completed during the fourth quarter of 2022 (dollars in millions, except per share data).

Period	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ⁽²⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ⁽²⁾
October 1 - 31, 2022	1,852,906	\$ 336.79	1,848,774	\$166
November 1 - 30, 2022	817,707	\$ 337.34	796,644	\$202
December 1 - 31, 2022	395,322	\$ 362.67	385,676	\$414

⁽¹⁾ Includes 4,132, 21,063 and 9,646 shares withheld from employees for the payment of taxes and exercise costs upon the exercise of stock options or vesting of other equity awards for the months of October, November and December 2022, respectively.

⁽²⁾ During the three months ended December 31, 2022, Charter purchased approximately 3.0 million shares of its Class A common stock for approximately \$1.0 billion, which includes 1.2 million Charter class A common shares purchased from Liberty Broadband pursuant to the LBB Letter Agreement at an average price per unit of \$354.97, or \$432 million. Charter Holdings purchased 0.6 million Charter Holdings common units from A/N at an average price per unit of \$363.53, or \$223

million during the three months ended December 31, 2022. As of December 31, 2022, Charter had remaining board authority to purchase an additional \$414 million of Charter's Class A common stock and/or Charter Holdings common units, excluding purchases from Liberty Broadband. In addition to open market purchases including pursuant to Rule 10b5-1 plans adopted from time to time, Charter may also buy shares of Charter Class A common stock, from time to time, pursuant to private transactions outside of its Rule 10b5-1 plan and any such repurchases may also trigger the repurchases from A/N pursuant to and to the extent provided in the A/N Letter Agreement or Liberty pursuant to the LBB Letter Agreement. See "Part II. Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources."

Item 6. [Reserved]

Not applicable.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Reference is made to "Part I. Item 1A. Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements," which describe important factors that could cause actual results to differ from expectations and non-historical information contained herein. In addition, the following discussion should be read in conjunction with the audited consolidated financial statements and accompanying notes thereto of Charter included in "Part II. Item 8. Financial Statements and Supplementary Data."

Overview

We are a leading broadband connectivity company and cable operator serving more than 32 million customers in 41 states through our Spectrum brand. Over an advanced high-capacity, two-way telecommunications network, we offer a full range of state-of-the-art residential and business services including Spectrum Internet, TV, Mobile and Voice. For small and medium-sized companies, Spectrum Business delivers the same suite of broadband products and services coupled with special features and applications to enhance productivity, while for larger businesses and government entities, Spectrum Enterprise provides highly customized, fiber-based solutions. Spectrum Reach delivers tailored advertising and production for the modern media landscape. We also distribute award-winning news coverage and sports programming to our customers through Spectrum Networks. See "Part I. Item 1. Business — Products and Services" for further description of these services, including customer statistics for different services.

During the year ended December 31, 2022, we added 1,728,000 mobile lines, 344,000 Internet customers and 126,000 residential and SMB customer relationships, which excludes mobile-only customers. We continue to see lower customer move rates and switching behavior among providers, which has reduced our selling opportunities. In October 2022, we introduced Spectrum One, which brings together Spectrum Internet, Advanced WiFi and Unlimited Spectrum Mobile, to offer consumers fast, reliable and secure online connections on their favorite devices at home and on-the-go in a high-value package which contributed to our increase in mobile lines in the fourth quarter. In 2022, we also made targeted investments in employee wages and benefits inside of our operations to build employee skill sets and tenure as well as continued to invest in digitization of our customer service platforms and proactive maintenance all with the goal of improving the customer experience, reducing transactions and driving customer growth.

We spent \$1.8 billion on our rural construction initiative during the year ended December 31, 2022. We expect that over time, our rural construction initiative will support customer growth and in 2022, we constructed over 200,000 rural passings. In addition, we continue to evolve and upgrade our network to provide higher Internet speeds and reliability and invest in our products and customer service platforms. We currently offer Spectrum Internet products with speeds up to 1 Gbps across our entire footprint and over the next three years, we plan to upgrade our network to provide multi-gigabit speeds. Our Advanced WiFi, a managed WiFi service that provides customers an optimized home network while providing greater control of their connected devices with enhanced security and privacy, is available to nearly all Internet customers. We continue to invest in our ability to provide a differentiated Internet connectivity experience for our mobile and fixed Internet customers with the availability of over 500,000 out of home WiFi access points across our footprint. In addition, we continue to work towards the construction of our own 5G mobile data-only network leveraging our CBRS PALs. By continually improving our product set and offering consumers the opportunity to save money by switching to our services, we believe we can continue to penetrate our expanding footprint and attract more spend on additional products for our existing customers.

In June 2022, we entered into a joint venture with Comcast to develop and offer a next-generation streaming platform, Xumo, on a variety of streaming devices and smart TVs. Our investment is approximately \$981 million with \$271 million paid in 2022 and with the remaining non-cancelable required contributions to be paid over multiple years.

We believe Spectrum-branded mobile services will drive higher sales of our core products, create longer customer lives and increase profitability and cash flow over time. During the years ended December 31, 2022 and 2021, our mobile product line increased revenues by \$3.0 billion and \$2.2 billion, respectively, reduced Adjusted EBITDA by approximately \$343 million and \$311 million, respectively, and reduced free cash flow by approximately \$1.1 billion and \$853 million, respectively. Mobile Adjusted EBITDA may continue to be negative primarily as a result of growth-related sales and marketing and other customer acquisition costs for mobile services, and depending on the pace of that growth. We also expect to continue to see negative free cash flow from the timing of device-related cash flows when we sell devices to customers pursuant to equipment installment plans and capital expenditures related to CBRS build-out.

We realized revenue, Adjusted EBITDA and income from operations during the periods presented as follows (in millions; all percentages are calculated using whole numbers; minor differences may exist due to rounding).

	Years ended December 31,		
	2022	2021	Growth
Revenues	\$ 54,022	\$ 51,682	4.5 %
Adjusted EBITDA	\$ 21,616	\$ 20,630	4.8 %
Income from operations	\$ 11,962	\$ 10,526	13.6 %

Adjusted EBITDA is defined as net income attributable to Charter shareholders plus net income attributable to noncontrolling interest, net interest expense, income taxes, depreciation and amortization, stock compensation expense, other income (expenses), net and other operating (income) expenses, net, such as special charges and (gain) loss on sale or retirement of assets. See “—Use of Adjusted EBITDA and Free Cash Flow” for further information on Adjusted EBITDA and free cash flow.

Growth in total revenue was primarily due to growth in our residential Internet, mobile and commercial customers, price adjustments and higher advertising sales. Adjusted EBITDA growth and changes in income from operations were impacted by growth in revenue and increases in operating costs and expenses, primarily mobile, costs to service customers and marketing.

Approximately 90% of our revenues for each of the years ended December 31, 2022 and 2021 are attributable to monthly subscription fees charged to customers for our Internet, video, voice, mobile and commercial services as well as regional sports and news channels. Generally, these customer subscriptions may be discontinued by the customer at any time subject to a fee for certain commercial customers. The remaining 10% of revenue is derived primarily from advertising revenues, franchise and other regulatory fee revenues (which are collected by us but then paid to local authorities), sales of mobile and video devices, processing fees or reconnection fees charged to customers to commence or reinstate service, installation, VOD and pay-per-view programming, and commissions related to the sale of merchandise by home shopping services.

Critical Accounting Policies and Estimates

Certain of our accounting policies require our management to make difficult, subjective and/or complex judgments. Management has discussed these policies with the Audit Committee of Charter’s board of directors, and the Audit Committee has reviewed the following disclosure. We consider the following policies to be the most critical in understanding the estimates, assumptions and judgments that are involved in preparing our financial statements, and the uncertainties that could affect our results of operations, financial condition and cash flows:

- Capitalization of labor and overhead costs
- Income taxes
- Defined benefit pension plans

Capitalization of labor and overhead costs

Costs associated with network construction or upgrades, placement of the customer drop to the dwelling and the placement of outlets within a dwelling along with the costs associated with the deployment of new customer premise equipment necessary to provide Internet, video or voice services, are capitalized. Costs capitalized include materials, direct labor and certain indirect

costs. These indirect costs consist of compensation and overhead costs associated with support functions. While our capitalization is based on specific activities, once capitalized, we track these costs on a composite basis by fixed asset category at the cable system level, and not on a specific asset basis. For assets that are sold or retired, we remove the estimated applicable cost and accumulated depreciation. The costs of disconnecting service and removing customer premise equipment from a dwelling and the costs to reconnect a customer drop or to redeploy previously installed customer premise equipment are charged to operating expense as incurred. Costs for repairs and maintenance are charged to operating expense as incurred, while plant and equipment replacement, including replacement of certain components, betterments, and replacement of cable drops and outlets, are capitalized.

We make judgments regarding the installation and construction activities to be capitalized. We capitalized direct labor and overhead of \$1.8 billion and \$1.7 billion for the years ended December 31, 2022 and 2021, respectively. We capitalize direct labor and overhead using standards developed from actual costs and applicable operational data. We calculate standards annually (or more frequently if circumstances dictate) for items such as the labor rates, overhead rates, and the actual amount of time required to perform a capitalizable activity. For example, the standard amounts of time required to perform capitalizable activities are based on studies of the time required to perform such activities. Overhead rates are established based on an analysis of the nature of costs incurred in support of capitalizable activities, and a determination of the portion of costs that is directly attributable to capitalizable activities. The impact of changes that resulted from these studies were not material in the periods presented.

Labor costs directly associated with capital projects are capitalized. Capitalizable activities performed in connection with installations include such activities as:

- dispatching a “truck roll” to the customer’s dwelling or business for service connection or placement of new equipment;
- costs to package and ship new equipment to a customer’s home for self-installation;
- verification of serviceability to the customer’s dwelling or business (i.e., determining whether the customer’s dwelling is capable of receiving service by our cable network);
- customer premise activities performed by in-house field technicians and third-party contractors in connection with the installation, replacement and betterment of equipment and materials to enable Internet, video or voice services; and
- verifying the integrity of the customer’s network connection by initiating test signals downstream from the headend to the customer premise equipment, as well as testing signal levels at the utility pole or pedestal.

Judgment is required to determine the extent to which overhead costs incurred result from specific capital activities, and therefore should be capitalized. The primary costs that are included in the determination of the overhead rate are (i) employee benefits and payroll taxes associated with capitalized direct labor, (ii) direct variable costs associated with capitalizable activities, (iii) the cost of support personnel, such as care personnel and dispatchers, who assist with capitalizable installation activities, and (iv) indirect costs directly attributable to capitalizable activities.

While we believe our existing capitalization policies are appropriate, a significant change in the nature or extent of our operating practices could affect management’s judgment about the extent to which we should capitalize direct labor or overhead in the future. We monitor the appropriateness of our capitalization policies, and perform updates to our internal studies on an ongoing basis to determine whether facts or circumstances warrant a change to our capitalization policies.

Income taxes

Charter has federal tax net operating loss carryforwards that expire in 2035 resulting from the operations of Charter Communications Holding Company, LLC and its subsidiaries and from loss carryforwards received as a result of the merger with TWC. In addition, Charter has state tax net operating loss carryforwards that generally expire in the years 2023 through 2042. Such tax loss carryforwards can accumulate and be used to offset Charter’s future taxable income. Charter’s federal tax loss carryforwards are subject to Section 382 and other restrictions. Charter also has indefinite life carryforwards as a result of Section 163(j) interest limitations.

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will be realized. In evaluating the need for a valuation allowance, management takes into account various factors, including the expiration date (if any) of such carryforwards, the expected level of future taxable income, available tax planning strategies and reversals of existing taxable temporary differences.

Approximately \$11 million of valuation allowance associated with federal capital loss carryforwards and approximately \$29 million of valuation allowance associated with state tax loss carryforwards and other miscellaneous deferred tax assets is

recorded on the December 31, 2022 consolidated balance sheet. No valuation allowance is deemed necessary as of December 31, 2022 related to the Section 163(j) interest limitation, based on the indefinite life carryforward, expected reversal of various deferred tax liabilities (primarily GAAP fixed asset depreciation), and a history of utilizing interest expense disallowance carryovers. We will continue to monitor this deferred tax asset and update the valuation allowance analysis as needed.

In determining our tax provision for financial reporting purposes, we establish a reserve for uncertain tax positions unless such positions are determined to be “more likely than not” of being sustained upon examination, based on their technical merits. In evaluating whether a tax position has met the more-likely-than-not recognition threshold, we presume the position will be examined by the appropriate taxing authority that has full knowledge of all relevant information. A tax position that meets the more-likely-than-not recognition threshold is measured to determine the amount of benefit to be recognized in our financial statements. The tax position is measured as the largest amount of benefit that has a greater than 50% likelihood of being realized when the position is ultimately resolved. There is considerable judgment involved in determining whether positions taken on the tax return are “more likely than not” of being sustained. We adjust our uncertain tax reserve estimates periodically because of ongoing examinations by, and settlements with, the various taxing authorities, as well as changes in tax laws, regulations and interpretations.

Charter is currently under examination by the Internal Revenue Service (“IRS”) for income tax purposes for 2016 and 2019. Charter’s 2020 and 2021 tax years remain open for examination and assessment. Charter’s 2017 and 2018 tax years remain open solely for purposes of loss and credit carryforwards. Charter’s short period return dated May 17, 2016 (prior to the merger with TWC and acquisition of Bright House) and prior years remain open solely for purposes of examination of Charter’s loss and credit carryforwards. The IRS is currently examining Charter Holdings’ income tax returns for 2016, 2019 and 2021. Charter Holdings’ 2020 tax year remains open for examination and assessment, while 2017 and 2018 remain open solely for purposes of credit carryforwards. The IRS is currently examining TWC’s income tax returns for 2011 through 2015. Prior to TWC’s separation from Time Warner Inc. (“Time Warner”) in March 2009, TWC was included in the consolidated U.S. federal and certain state income tax returns of Time Warner. The IRS has examined Time Warner’s 2008 through 2010 income tax returns and the appeal results are being evaluated. We do not anticipate that these examinations will have a material impact on our consolidated financial position or results of operations. In addition, we are also subject to ongoing examinations of our tax returns by state and local tax authorities for various periods. Activity related to these state and local examinations did not have a material impact on our consolidated financial position or results of operations during the year ended December 31, 2022, nor do we anticipate a material impact in the future.

Defined benefit pension plans

We sponsor qualified and unqualified defined benefit pension plans that provide pension benefits to a majority of employees who were employed by TWC before the merger with TWC. As of December 31, 2022, the accumulated benefit obligation and fair value of plan assets was \$2.2 billion and \$2.6 billion, respectively, and the net funded asset was recorded as a \$362 million noncurrent asset, \$5 million current liability and \$17 million long-term liability. As of December 31, 2021, the accumulated benefit obligation and fair value of plan assets was \$3.4 billion and \$3.5 billion, respectively, and the net funded asset was recorded as a \$114 million noncurrent asset, \$4 million current liability and \$27 million long-term liability.

Pension benefits are based on formulas that reflect the employees’ years of service and compensation during their employment period. Actuarial gains or losses are changes in the amount of either the benefit obligation or the fair value of plan assets resulting from experience different from that assumed or from changes in assumptions. We have elected to follow a mark-to-market pension accounting policy for recording the actuarial gains or losses annually during the fourth quarter, or earlier if a remeasurement event occurs during an interim period. We use a December 31 measurement date for our pension plans.

We recognized net periodic pension benefit of \$254 million and \$305 million in 2022 and 2021, respectively. Net periodic pension benefit or expense is determined using certain assumptions, including the expected long-term rate of return on plan assets, discount rate and mortality assumptions. We determined the discount rate used to compute pension expense based on the yield of a large population of high-quality corporate bonds with cash flows sufficient in timing and amount to settle projected future defined benefit payments. In developing the expected long-term rate of return on assets, we considered the current pension portfolio’s composition, past average rate of earnings, and our asset allocation targets. We used a discount rate of 5.46% to determine the December 31, 2022 pension plan benefit obligation. A decrease in the discount rate of 25 basis points would result in an \$83 million increase in our pension plan benefit obligation as of December 31, 2022 and net periodic pension expense recognized in 2022 under our mark-to-market accounting policy. The expected long-term rate of return on plan assets used to determine net periodic pension benefit for the year ended December 31, 2023 is expected to be 5.00%. A decrease in the expected long-term rate of return of 25 basis points to 4.75%, while holding all other assumptions constant, would result in

a decrease in our 2023 net periodic pension benefit of approximately \$6 million. See Note 21 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data” for additional discussion on these assumptions.

Results of Operations

A discussion of changes in our results of operations during the year ended December 31, 2021 compared to the year ended December 31, 2020 has been omitted from this Annual Report on Form 10-K, but may be found in “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on January 28, 2022, which is available free of charge on the SEC’s website at www.sec.gov and on our investor relations website at ir.charter.com.

The following table sets forth the consolidated statements of operations for the periods presented (dollars in millions, except per share data):

	Year Ended December 31,	
	2022	2021
Revenues	\$ 54,022	\$ 51,682
Costs and Expenses:		
Operating costs and expenses (exclusive of items shown separately below)	32,876	31,482
Depreciation and amortization	8,903	9,345
Other operating expenses, net	281	329
	42,060	41,156
Income from operations	11,962	10,526
Other Income (Expenses):		
Interest expense, net	(4,556)	(4,037)
Other income (expenses), net	56	(101)
	(4,500)	(4,138)
Income before income taxes	7,462	6,388
Income tax expense	(1,613)	(1,068)
Consolidated net income	5,849	5,320
Less: Net income attributable to noncontrolling interests	(794)	(666)
Net income attributable to Charter shareholders	\$ 5,055	\$ 4,654
EARNINGS PER COMMON SHARE ATTRIBUTABLE TO CHARTER SHAREHOLDERS:		
Basic	\$ 31.30	\$ 25.34
Diluted	\$ 30.74	\$ 24.47
Weighted average common shares outstanding, basic	161,501,355	183,669,369
Weighted average common shares outstanding, diluted	164,433,596	193,042,948

Revenues. Total revenues grew \$2.3 billion or 4.5% during the year ended December 31, 2022 as compared to 2021 primarily due to increases in the number of residential Internet, mobile and commercial customers, price adjustments and higher advertising sales.

Revenues by service offering were as follows (dollars in millions; all percentages are calculated using whole numbers; minor differences may exist due to rounding):

	Years ended December 31,		
	2022	2021	Growth
Internet	\$ 22,222	\$ 21,094	5.3 %
Video	17,460	17,630	(1.0) %
Voice	1,559	1,598	(2.5) %
Residential revenue	41,241	40,322	2.3 %
Small and medium business	4,301	4,170	3.1 %
Enterprise	2,677	2,573	4.0 %
Commercial revenue	6,978	6,743	3.5 %
Advertising sales	1,882	1,594	18.1 %
Mobile	3,042	2,178	39.7 %
Other	879	845	4.0 %
	<u>\$ 54,022</u>	<u>\$ 51,682</u>	<u>4.5 %</u>

The increase in Internet revenues from our residential customers was attributable to the following (dollars in millions):

	2022 compared to 2021
Increase related to rate and product mix changes	\$ 634
Increase in average residential Internet customers	494
	<u>\$ 1,128</u>

The increase related to rate and product mix was primarily due to promotional roll-off and rate adjustments. Residential Internet customers grew by 275,000 in 2022 compared to 2021.

Video revenues consist primarily of revenues from basic and digital video services provided to our residential customers, as well as franchise fees, equipment service fees and video installation revenue. The decrease in video revenues was attributable to the following (dollars in millions):

	2022 compared to 2021
Decrease in average residential video customers	\$ (621)
Increase related to rate and product mix changes	451
	<u>\$ (170)</u>

Residential video customers decreased by 719,000 in 2022 compared to 2021. The increase related to rate and product mix was primarily due to price adjustments and promotional roll-off and was partly offset by a higher mix of lower cost video packages within our video customer base

The decrease in voice revenues from our residential customers was attributable to the following (dollars in millions):

	2022 compared to 2021
Decrease in average residential voice customers	\$ (137)
Increase related to rate	98
	<u>\$ (39)</u>

Residential wireline voice customers decreased by 924,000 in 2022 compared to 2021.

The increase in SMB commercial revenues was attributable to the following (dollars in millions):

	2022 compared to 2021
Increase in SMB customers	\$ 157
Decrease related to rate and product mix changes	(26)
	<u>\$ 131</u>

SMB customers increased by 64,000 in 2022 compared to 2021.

Enterprise revenues increased \$104 million during the year ended December 31, 2022 as compared to the corresponding period in 2021 primarily due to an increase in Internet PSUs offset by a \$16 million one-time benefit incurred during the year ended December 31, 2021 as well as lower wholesale PSUs. Enterprise PSUs increased by 12,000 in 2022 compared to 2021.

Advertising sales revenues consist primarily of revenues from commercial advertising customers, programmers and other vendors, as well as local cable and advertising on regional sports and news channels. Advertising sales revenues increased \$288 million during the year ended December 31, 2022 as compared to the corresponding period in 2021 primarily due to an increase in political revenue.

During the years ended December 31, 2022 and 2021, mobile revenues included approximately \$1.3 billion and \$909 million of device revenues, respectively, and approximately \$1.7 billion and \$1.3 billion of service revenues, respectively. The increases in revenues are a result of an increase of 1,728,000 lines from December 31, 2021 to December 31, 2022.

Other revenues consist of revenue from processing fees, regional sports and news channels (excluding intercompany charges or advertising sales on those channels), subsidy revenue, home shopping, video device sales, wire maintenance fees and other miscellaneous revenues. Other revenues increased approximately \$34 million during the year ended December 31, 2022 as compared to the corresponding period in 2021 primarily due to subsidy revenue related to our rural construction initiative and an increase in processing fees offset by a decrease in sales of video devices.

Operating costs and expenses. The increase in our operating costs and expenses, exclusive of items shown separately in the consolidated statements of operations, was attributable to the following (dollars in millions):

	2022 compared to 2021
Programming	\$ (224)
Regulatory, connectivity and produced content	(191)
Costs to service customers	379
Marketing	268
Mobile	896
Other	266
	<u>\$ 1,394</u>

Programming costs were approximately \$11.6 billion and \$11.8 billion for the years ended December 31, 2022 and 2021, representing 35% and 38% of total operating costs and expenses, respectively. Programming costs consist primarily of costs paid to programmers for basic, digital, premium, video on demand, and pay-per-view programming. Programming costs decreased as a result of fewer customers and a higher mix of lower cost video packages within our video customer base offset by contractual rate adjustments, including renewals and increases in amounts paid for retransmission consent.

Regulatory, connectivity and produced content decreased \$191 million during the year ended December 31, 2022 compared to the corresponding period in 2021 primarily due to lower costs of video devices sold to customers and regulatory pass-through fees as well as lower sports rights costs as a result of more basketball games during 2021 as compared to 2022 as the prior period had additional games due to the delayed start of the 2020 - 2021 National Basketball Association ("NBA") season as a result of COVID-19.

Costs to service customers increased \$379 million during the year ended December 31, 2022 compared to the corresponding period in 2021 primarily due to higher bad debt, adjustments to job structure, pay and benefits to build a more skilled and longer tenured workforce and fuel costs.

Mobile costs of \$3.4 billion and \$2.5 billion for the years ended December 31, 2022 and 2021, respectively, were comprised of mobile device, mobile service, customer acquisition and operating costs. The increase is attributable to an increase in the number of mobile lines.

The increase in other expense was attributable to the following (dollars in millions):

	2022 compared to 2021
Advertising sales expense	\$ 84
Corporate costs	78
Enterprise	43
Stock compensation expense	40
Other	21
	<u>\$ 266</u>

Advertising sales expense increased during the year ended December 31, 2022 compared to the corresponding prior period due to higher costs of sales fees driven by higher political revenue. Corporate costs increased primarily due to higher computer and software expense and labor costs.

Depreciation and amortization. Depreciation and amortization expense decreased by \$442 million during the year ended December 31, 2022 compared to the corresponding period in 2021 primarily due to certain assets acquired in acquisitions becoming fully depreciated offset by an increase in depreciation as a result of more recent capital expenditures.

Other operating expenses, net. The decrease in other operating expenses, net was attributable to the following (dollars in millions):

	2022 compared to 2021
Special charges, net	\$ 24
(Gain) loss on sale of assets, net	(72)
	<u>\$ (48)</u>

For more information, see Note 14 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data.”

Interest expense, net. Net interest expense increased by \$519 million in 2022 from 2021 primarily due to an increase in weighted average debt outstanding of approximately \$8.3 billion as well as an increase in weighted average interest rates. The increase in weighted average debt outstanding is primarily due to the issuance of notes throughout 2021 and 2022.

Other income (expenses), net. The change in other income (expenses), net is attributable to the following (dollars in millions):

	2022 compared to 2021
Loss on extinguishment of debt (see Note 8)	\$ 141
Loss on financial instruments, net (see Note 11)	(9)
Net periodic pension benefit (cost) (see Note 21)	(51)
Loss on equity investments, net (see Note 5)	76
	<u>\$ 157</u>

See Note 15 and the Notes referenced above to the accompanying consolidated financial statements contained in “Item 1. Financial Statements” for more information.

Income tax expense. We recognized income tax expense of \$1.6 billion and \$1.1 billion for the years ended December 31, 2022 and 2021, respectively. Income tax expense increased during the year ended December 31, 2022 compared to the corresponding period in 2021 primarily as a result of an increase in pretax income, lower benefit from state tax rate changes and decreased recognition of excess tax benefits resulting from share-based compensation during 2021. For more information, see Note 17 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data.”

Net income attributable to noncontrolling interest. Net income attributable to noncontrolling interest for financial reporting purposes represents A/N’s portion of Charter Holdings’ net income based on its effective common unit ownership interest and the preferred dividend of \$70 million for the year ended December 31, 2021. For more information, see Note 10 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data.”

Net income attributable to Charter shareholders. Net income attributable to Charter shareholders was \$5.1 billion and \$4.7 billion for the years ended December 31, 2022 and 2021, respectively, primarily as a result of the factors described above.

Use of Adjusted EBITDA and Free Cash Flow

We use certain measures that are not defined by U.S. generally accepted accounting principles (“GAAP”) to evaluate various aspects of our business. Adjusted EBITDA and free cash flow are non-GAAP financial measures and should be considered in addition to, not as a substitute for, net income attributable to Charter shareholders and net cash flows from operating activities reported in accordance with GAAP. These terms, as defined by us, may not be comparable to similarly titled measures used by other companies. Adjusted EBITDA and free cash flow are reconciled to net income attributable to Charter shareholders and net cash flows from operating activities, respectively, below.

Adjusted EBITDA eliminates the significant non-cash depreciation and amortization expense that results from the capital-intensive nature of our businesses as well as other non-cash or special items, and is unaffected by our capital structure or investment activities. However, this measure is limited in that it does not reflect the periodic costs of certain capitalized tangible and intangible assets used in generating revenues and our cash cost of financing. These costs are evaluated through other financial measures.

Free cash flow is defined as net cash flows from operating activities, less capital expenditures and changes in accrued expenses related to capital expenditures.

Management and Charter’s board of directors use Adjusted EBITDA and free cash flow to assess our performance and our ability to service our debt, fund operations and make additional investments with internally generated funds. In addition, Adjusted EBITDA generally correlates to the leverage ratio calculation under our credit facilities or outstanding notes to determine compliance with the covenants contained in the facilities and notes (all such documents have been previously filed with the SEC). For the purpose of calculating compliance with leverage covenants, we use Adjusted EBITDA, as presented, excluding certain expenses paid by our operating subsidiaries to other Charter entities. Our debt covenants refer to these expenses as management fees, which fees were in the amount of \$1.4 billion and \$1.3 billion for the years ended December 31, 2022 and 2021, respectively.

A reconciliation of Adjusted EBITDA and free cash flow to net income attributable to Charter shareholders and net cash flows from operating activities, respectively, is as follows (dollars in millions):

	Years ended December 31,	
	2022	2021
Net income attributable to Charter shareholders	\$ 5,055	\$ 4,654
Plus: Net income attributable to noncontrolling interest	794	666
Interest expense, net	4,556	4,037
Income tax expense	1,613	1,068
Depreciation and amortization	8,903	9,345
Stock compensation expense	470	430
Other expenses, net	225	430
Adjusted EBITDA	\$ 21,616	\$ 20,630
Net cash flows from operating activities	\$ 14,925	\$ 16,239
Less: Purchases of property, plant and equipment	(9,376)	(7,635)
Change in accrued expenses related to capital expenditures	553	80
Free cash flow	\$ 6,102	\$ 8,684

Liquidity and Capital Resources

Overview

We have significant amounts of debt. The principal amount of our debt as of December 31, 2022 was \$97.4 billion, consisting of \$13.9 billion of credit facility debt, \$56.8 billion of investment grade senior secured notes and \$26.7 billion of high-yield senior unsecured notes. Our business requires significant cash to fund principal and interest payments on our debt. As of December 31, 2022, \$70.7 billion of our debt was rated investment grade and \$26.7 billion was rated high yield debt. This split rating allows us to access both the investment grade debt market and the high yield debt market.

Our projected cash needs and projected sources of liquidity depend upon, among other things, our actual results, and the timing and amount of our expenditures. As we continue to grow our market penetration of our mobile product, we will continue to experience negative working capital impacts from the timing of device-related cash flows when we sell devices to customers pursuant to equipment installment plans. Further, in 2022, Charter has become a meaningful federal cash tax payer as the majority of our net operating losses have been utilized. Free cash flow was \$6.1 billion and \$8.7 billion for the years ended December 31, 2022 and 2021, respectively. See table below for factors impacting free cash flow during the year ended December 31, 2022 compared to 2021. As of December 31, 2022, the amount available under our credit facilities was approximately \$4.0 billion and cash on hand was approximately \$645 million. We expect to utilize free cash flow, cash on hand and availability under our credit facilities as well as future refinancing transactions to further extend the maturities of our obligations. The timing and terms of any refinancing transactions will be subject to market conditions among other considerations. Additionally, we may, from time to time, and depending on market conditions and other factors, use cash on hand and the proceeds from securities offerings or other borrowings to retire our debt through open market purchases, privately negotiated purchases, tender offers or redemption provisions. We believe we have sufficient liquidity from cash on hand, free cash flow and Charter Operating's revolving credit facility as well as access to the capital markets to fund our projected cash needs.

We continue to evaluate the deployment of our cash on hand and anticipated future free cash flow including to invest in our business growth and other strategic opportunities, including expanding the capacity of our network, the expansion of our network through our rural broadband construction initiative, the build-out and deployment of our CBRS spectrum, and mergers and acquisitions as well as stock repurchases and dividends. Charter's target leverage of net debt to the last twelve months Adjusted EBITDA remains at 4 to 4.5 times Adjusted EBITDA, and up to 3.5 times Adjusted EBITDA at the Charter Operating first lien level. Our leverage ratio was 4.47 times Adjusted EBITDA as of December 31, 2022. As Adjusted EBITDA grows, we expect to increase the total amount of our indebtedness to maintain leverage within Charter's target leverage range. Excluding purchases from Liberty Broadband discussed below, during the years ended December 31, 2022 and 2021, Charter purchased in the public market approximately 14.5 million and 15.9 million shares, respectively, of Charter Class A common stock for approximately \$7.1 billion and \$10.9 billion, respectively. Since the beginning of its buyback program in September 2016 through the year ended December 31, 2022, Charter has purchased in the public market approximately 149.4 million

shares of Class A common stock and Charter Holdings common units for approximately \$68.5 billion, including purchases from Liberty Broadband and A/N discussed below.

In February 2021, Charter and Liberty Broadband entered into a letter agreement (the "LBB Letter Agreement"). The LBB Letter Agreement implements Liberty Broadband's obligations under the Stockholders Agreement to participate in share repurchases by Charter. Under the LBB Letter Agreement, Liberty Broadband will sell to Charter, generally on a monthly basis, a number of shares of Charter Class A common stock representing an amount sufficient for Liberty Broadband's ownership of Charter to be reduced such that it does not exceed the ownership cap then applicable to Liberty Broadband under the Stockholders Agreement at a purchase price per share equal to the volume weighted average price per share paid by Charter for shares repurchased during such immediately preceding calendar month other than (i) purchases from A/N, (ii) purchases in privately negotiated transactions or (iii) purchases for the withholding of shares of Charter Class A common stock pursuant to equity compensation programs of Charter. Charter purchased from Liberty Broadband 6.2 million and 6.1 million shares of Charter Class A common stock for approximately \$3.0 billion and \$4.2 billion during the years ended December 31, 2022 and 2021, respectively. In January 2023, Charter purchased from Liberty Broadband an additional 0.1 million shares of Charter Class A common stock for approximately \$42 million.

In December 2016, Charter and A/N entered into a letter agreement, as amended in December 2017 (the "A/N Letter Agreement"), that requires A/N to sell to Charter or to Charter Holdings, on a monthly basis, a number of shares of Charter Class A common stock or Charter Holdings common units that represents a pro rata participation by A/N and its affiliates in any repurchases of shares of Charter Class A common stock from persons other than A/N effected by Charter during the immediately preceding calendar month, at a purchase price equal to the average price paid by Charter for the shares repurchased from persons other than A/N during such immediately preceding calendar month. A/N and Charter both have the right to terminate or suspend the pro rata repurchase arrangement on a prospective basis. During the years ended December 31, 2022 and 2021, Charter Holdings purchased from A/N 3.2 million and 3.3 million Charter Holdings common units, respectively, for approximately \$1.6 billion and \$2.2 billion, respectively.

As of December 31, 2022, Charter had remaining board authority to purchase an additional \$414 million of Charter's Class A common stock and/or Charter Holdings common units, excluding purchases from Liberty Broadband. Although Charter expects to continue to buy back its common stock consistent with its leverage target range, Charter is not obligated to acquire any particular amount of common stock, and the timing of any purchases that may occur cannot be predicted and will largely depend on market conditions and other potential uses of capital. Purchases may include open market purchases, tender offers or negotiated transactions.

As possible acquisitions, swaps or dispositions arise, we actively review them against our objectives including, among other considerations, improving the operational efficiency, geographic clustering of assets, product development or technology capabilities of our business and achieving appropriate return targets, and we may participate to the extent we believe these possibilities present attractive opportunities. However, there can be no assurance that we will actually complete any acquisitions, dispositions or system swaps, or that any such transactions will be material to our operations or results.

Free Cash Flow

Free cash flow decreased \$2.6 billion during the year ended December 31, 2022 compared to the corresponding prior period due to the following (dollars in millions):

	2022 compared to 2021
Increase in capital expenditures	\$ (1,741)
Increase in cash paid for taxes, net	(1,168)
Increase in cash paid for interest, net	(460)
Increase in Adjusted EBITDA	986
Change in working capital, excluding change in accrued interest and taxes	188
Other, net	(387)
	<u>\$ (2,582)</u>

Free cash flow was reduced by \$1.1 billion and \$853 million during the years ended December 31, 2022 and 2021, respectively, due to mobile impacts negatively affecting working capital, capital expenditures and Adjusted EBITDA. The increase in capital expenditures is primarily due to the rural construction initiative of \$1.8 billion during the year ended December 31, 2022. Cash

paid for taxes, net increased as Charter has become a meaningful federal cash tax payer in 2022. Other, net for the year ended December 31, 2022 includes the payment of litigation settlements including the payment of a previously recorded litigation settlement with Sprint Communications Company L.P. and T-Mobile USA, Inc. See Note 14 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data.”

Historical Operating, Investing, and Financing Activities

Cash and Cash Equivalents. We held \$645 million and \$601 million in cash and cash equivalents as of December 31, 2022 and 2021, respectively.

Operating Activities. Net cash provided by operating activities decreased \$1.3 billion during the year ended December 31, 2022 compared to the year ended December 31, 2021, primarily due to an increase in cash paid for taxes, higher cash paid for interest and the payment of litigation settlements offset by an increase in Adjusted EBITDA of \$986 million.

Investing Activities. Net cash used in investing activities for the years ended December 31, 2022 and 2021 was \$9.1 billion and \$7.8 billion, respectively. The increase in cash used was primarily due to an increase in capital expenditures, offset by changes in accrued expenses related to capital expenditures that increased by \$473 million.

Financing Activities. Net cash used in financing activities decreased \$3.1 billion during the year ended December 31, 2022 compared to the year ended December 31, 2021 primarily due to a decrease in the purchase of treasury stock and noncontrolling interest offset by a decrease in the amount by which borrowings of long-term debt exceeded repayments.

Capital Expenditures

We have significant ongoing capital expenditure requirements. Capital expenditures were \$9.4 billion and \$7.6 billion for the years ended December 31, 2022 and 2021, respectively. The increase was primarily due to an increase in line extensions and customer premise equipment. The increase in line extensions was primarily due to the rural construction initiative. See the table below for more details.

We currently expect full year 2023 capital expenditures, excluding line extensions, to be between \$6.5 billion and \$6.8 billion. We expect 2023 line extensions capital expenditures to approximate \$4 billion. The actual amount of capital expenditures in 2023 will depend on a number of factors including, but not limited to, the pace of our network evolution and rural construction initiatives, supply chain timing and growth rates in our residential and commercial businesses.

Our capital expenditures are funded primarily from cash flows from operating activities and borrowings on our credit facility. In addition, our accrued liabilities related to capital expenditures increased \$553 million and \$80 million for the years ended December 31, 2022 and 2021, respectively.

The following tables present our major capital expenditures categories in accordance with National Cable and Telecommunications Association (“NCTA”) disclosure guidelines for the years ended December 31, 2022 and 2021. These disclosure guidelines are not required disclosures under GAAP, nor do they impact our accounting for capital expenditures under GAAP (dollars in millions):

	Year ended December 31,	
	2022	2021
Customer premise equipment ^(a)	\$ 2,209	\$ 1,967
Scalable infrastructure ^(b)	1,791	1,677
Line extensions ^(c)	2,990	1,642
Upgrade/rebuild ^(d)	845	706
Support capital ^(e)	1,541	1,643
Total capital expenditures	\$ 9,376	\$ 7,635
Capital expenditures included in total related to:		
Capital expenditures, excluding line extensions	\$ 6,386	\$ 5,993
Line extensions ^(c)	2,990	1,642
Total capital expenditures	\$ 9,376	\$ 7,635
Of which: Commercial services	\$ 1,511	\$ 1,445
Of which: Mobile	\$ 376	\$ 482
Of which: Rural construction initiative ^(f)	\$ 1,791	\$ —

- (a) Customer premise equipment includes costs incurred at the customer residence to secure new customers and revenue generating units, including customer installation costs and customer premise equipment (e.g., digital receivers and cable modems).
- (b) Scalable infrastructure includes costs not related to customer premise equipment, to secure growth of new customers and revenue generating units, or provide service enhancements (e.g., headend equipment).
- (c) Line extensions include network costs associated with entering new service areas (e.g., fiber/coaxial cable, amplifiers, electronic equipment, make-ready and design engineering).
- (d) Upgrade/rebuild includes costs to modify or replace existing fiber/coaxial cable networks, including betterments.
- (e) Support capital includes costs associated with the replacement or enhancement of non-network assets due to technological and physical obsolescence (e.g., non-network equipment, land, buildings and vehicles).
- (f) The rural construction initiative subcategory includes expenditures associated with our Rural Construction Initiative (for which separate reporting was initiated in 2022), excluding customer premise equipment and installation.

Debt

As of December 31, 2022, the accreted value of our total debt was approximately \$97.6 billion, as summarized below (dollars in millions):

	December 31, 2022			
	Principal Amount	Accreted Value ^(a)	Interest Payment Dates	Maturity Date ^(b)
CCO Holdings, LLC:				
4.000% senior notes due 2023	\$ 500	\$ 500	3/1 & 9/1	3/1/2023
5.500% senior notes due 2026	750	748	5/1 & 11/1	5/1/2026
5.125% senior notes due 2027	3,250	3,232	5/1 & 11/1	5/1/2027
5.000% senior notes due 2028	2,500	2,479	2/1 & 8/1	2/1/2028
5.375% senior notes due 2029	1,500	1,501	6/1 & 12/1	6/1/2029
6.375% senior notes due 2029	1,500	1,487	3/1 & 9/1	9/1/2029
4.750% senior notes due 2030	3,050	3,043	3/1 & 9/1	3/1/2030
4.500% senior notes due 2030	2,750	2,750	2/15 & 8/15	8/15/2030
4.250% senior notes due 2031	3,000	3,001	2/1 & 8/1	2/1/2031

4.750% senior notes due 2032	1,200	1,189	2/1 & 8/1	2/1/2032
4.500% senior notes due 2032	2,900	2,924	5/1 & 11/1	5/1/2032
4.500% senior notes due 2033	1,750	1,730	6/1 & 12/1	6/1/2033
4.250% senior notes due 2034	2,000	1,983	1/15 & 7/15	1/15/2034
Charter Communications Operating, LLC:				
Senior floating rate notes due 2024	900	901	2/1, 5/1, 8/1 & 11/1	2/1/2024
4.500% senior notes due 2024	1,100	1,098	2/1 & 8/1	2/1/2024
4.908% senior notes due 2025	4,500	4,486	1/23 & 7/23	7/23/2025
3.750% senior notes due 2028	1,000	992	2/15 & 8/15	2/15/2028
4.200% senior notes due 2028	1,250	1,244	3/15 & 9/15	3/15/2028
2.250% senior notes due 2029	1,250	1,241	1/15 & 7/15	1/15/2029
5.050% senior notes due 2029	1,250	1,243	3/30 & 9/30	3/30/2029
2.800% senior notes due 2031	1,600	1,586	4/1 & 10/1	4/1/2031
2.300% senior notes due 2032	1,000	993	2/1 & 8/1	2/1/2032
4.400% senior notes due 2033	1,000	990	4/1 & 10/1	4/1/2033
6.384% senior notes due 2035	2,000	1,985	4/23 & 10/23	10/23/2035
5.375% senior notes due 2038	800	787	4/1 & 10/1	4/1/2038
3.500% senior notes due 2041	1,500	1,483	6/1 & 12/1	6/1/2041
3.500% senior notes due 2042	1,350	1,332	3/1 & 9/1	3/1/2042
6.484% senior notes due 2045	3,500	3,469	4/23 & 10/23	10/23/2045
5.375% senior notes due 2047	2,500	2,506	5/1 & 11/1	5/1/2047
5.750% senior notes due 2048	2,450	2,393	4/1 & 10/1	4/1/2048
5.125% senior notes due 2049	1,250	1,240	1/1 & 7/1	7/1/2049
4.800% senior notes due 2050	2,800	2,797	3/1 & 9/1	3/1/2050
3.700% senior notes due 2051	2,050	2,031	4/1 & 10/1	4/1/2051
3.900% senior notes due 2052	2,400	2,323	6/1 & 12/1	6/1/2052
5.250% senior notes due 2053	1,500	1,479	4/1 & 10/1	4/1/2053
6.834% senior notes due 2055	500	495	4/23 & 10/23	10/23/2055
3.850% senior notes due 2061	1,850	1,810	4/1 & 10/1	4/1/2061
4.400% senior notes due 2061	1,400	1,389	6/1 & 12/1	12/1/2061
3.950% senior notes due 2062	1,400	1,379	6/30 & 12/30	6/30/2062
5.500% senior notes due 2063	1,000	986	4/1 & 10/1	4/1/2063
Credit facilities	13,877	13,823		Varies
Time Warner Cable, LLC:				
5.750% sterling senior notes due 2031 ^(c)	755	797	6/2	6/2/2031
6.550% senior debentures due 2037	1,500	1,655	5/1 & 11/1	5/1/2037
7.300% senior debentures due 2038	1,500	1,745	1/1 & 7/1	7/1/2038
6.750% senior debentures due 2039	1,500	1,693	6/15 & 12/15	6/15/2039
5.875% senior debentures due 2040	1,200	1,250	5/15 & 11/15	11/15/2040
5.500% senior debentures due 2041	1,250	1,257	3/1 & 9/1	9/1/2041
5.250% sterling senior notes due 2042 ^(d)	786	760	7/15	7/15/2042
4.500% senior debentures due 2042	1,250	1,150	3/15 & 9/15	9/15/2042
Time Warner Cable Enterprises LLC:				
8.375% senior debentures due 2023	1,000	1,010	3/15 & 9/15	3/15/2023
8.375% senior debentures due 2033	1,000	1,238	7/15 & 1/15	7/15/2033
	<u>\$ 97,368</u>	<u>\$ 97,603</u>		

(a) The accreted values presented in the table above represent the principal amount of the debt adjusted for original issue discount or premium at the time of sale, deferred financing costs, and, in regards to debt assumed in acquisitions, fair value premium adjustments as a result of applying acquisition accounting plus the accretion of those amounts to the balance sheet date. However, the amount that is currently payable if the debt becomes immediately due is equal to the principal amount of the debt. In regards to the Sterling Notes, the principal amount of the debt and any premium or discount is remeasured into US dollars as of each balance sheet date. We have availability under our credit facilities of approximately \$4.0 billion as of December 31, 2022.

- (b) In general, the obligors have the right to redeem all of the notes set forth in the above table in whole or in part at their option, beginning at various times prior to their stated maturity dates, subject to certain conditions, upon the payment of the outstanding principal amount (plus a specified redemption premium) and all accrued and unpaid interest.
- (c) Principal amount includes £625 million valued at \$755 million as of December 31, 2022 using the exchange rate as of December 31, 2022.
- (d) Principal amount includes £650 million valued at \$786 million as of December 31, 2022 using the exchange rate as of December 31, 2022.

In 2022, Charter Operating entered into an amendment to its credit agreement. Also in 2022, CCO Holdings and CCO Holdings Capital Corp. jointly issued \$2.7 billion aggregate principal amount of senior unsecured notes and Charter Operating and Charter Communications Operating Capital Corp. jointly issued \$3.5 billion aggregate principal amount of senior secured notes. The notes were issued at varying rates, prices and maturity dates and the net proceeds were used to pay related fees and expenses and for general corporate purposes, including funding buybacks of Charter Class A common stock and Charter Holdings common units as well as repaying certain indebtedness.

See Note 8 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data” for further details regarding our outstanding debt and other financing arrangements, including certain information about maturities, covenants and restrictions related to such debt and financing arrangements. The agreements and instruments governing our debt and financing arrangements are complicated and you should consult such agreements and instruments which are filed with the SEC for more detailed information.

At December 31, 2022, Charter Operating had a consolidated leverage ratio of approximately 3.0 to 1.0 and a consolidated first lien leverage ratio of 3.0 to 1.0. Both ratios are in compliance with the ratios required by the Charter Operating credit facilities of 5.0 to 1.0 consolidated leverage ratio and 4.0 to 1.0 consolidated first lien leverage ratio. A failure by Charter Operating to maintain the financial covenants would result in an event of default under the Charter Operating credit facilities and the debt of CCO Holdings. See “Part I. Item 1A. Risk Factors — The agreements and instruments governing our debt contain restrictions and limitations that could significantly affect our ability to operate our business, as well as significantly affect our liquidity.”

Recently Issued Accounting Standards

See Note 22 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data” for a discussion of recently issued accounting standards.

Item 7A. *Quantitative and Qualitative Disclosures About Market Risk.*

Cross-currency derivative instruments are used to manage foreign exchange risk on the Sterling Notes by effectively converting £1.275 billion aggregate principal amount of fixed-rate British pound sterling denominated debt, including annual interest payments and the payment of principal at maturity, to fixed-rate U.S. dollar denominated debt. The fair value of our cross-currency derivatives included in other long-term liabilities on our consolidated balance sheets was \$570 million and \$290 million as of December 31, 2022 and 2021, respectively. For more information, see Note 11 to the accompanying consolidated financial statements contained in “Part II. Item 8. Financial Statements and Supplementary Data.”

As of December 31, 2022 and 2021, the weighted average interest rate on the credit facility debt was approximately 5.9% and 1.6%, respectively, and the weighted average interest rate on the senior notes was approximately 5.0% and 4.9%, respectively, resulting in a blended weighted average interest rate of 5.1% and 4.5%, respectively. The interest rate on approximately 85% and 87% of the total principal amount of our debt was fixed as of December 31, 2022 and 2021, respectively.

The table set forth below summarizes the fair values and contract terms of financial instruments subject to interest rate risk maintained by us as of December 31, 2022 (dollars in millions):

	2023	2024	2025	2026	2027	Thereafter	Total	Fair Value
Debt:								
Fixed Rate	\$ 1,500	\$ 1,100	\$ 4,500	\$ 750	\$ 3,250	\$ 71,491	\$ 82,591	\$ 68,427
Average Interest Rate	6.92 %	4.50 %	4.91 %	5.50 %	5.13 %	4.92 %	4.96 %	
Variable Rate	\$ 390	\$ 1,290	\$ 2,661	\$ 366	\$ 9,707	\$ 363	\$ 14,777	\$ 14,371
Average Interest Rate	6.15 %	5.57 %	4.99 %	4.50 %	4.68 %	4.73 %	4.85 %	

Interest rates on variable-rate debt are estimated using the average implied forward LIBOR or SOFR for the year of maturity based on the yield curve in effect at December 31, 2022 including applicable bank spread.

Item 8. Financial Statements and Supplementary Data.

Our consolidated financial statements, the related notes thereto, and the reports of independent accountants are included in this annual report beginning on page F-1.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Conclusion Regarding the Effectiveness of Disclosure Controls and Procedures

As of the end of the period covered by this report, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we have evaluated the effectiveness of the design and operation of disclosure controls and procedures with respect to the information generated for use in this annual report. The evaluation was based upon reports and certifications provided by a number of executives. Based on, and as of the date of that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that the disclosure controls and procedures were effective to provide reasonable assurances that information required to be disclosed in the reports we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms.

In designing and evaluating the disclosure controls and procedures, our management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired control objectives, and management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based upon the above evaluation, we believe that our controls provide such reasonable assurances.

During the quarter ended December 31, 2022, there was no change in our internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) for the Company. Our internal control system was designed to provide reasonable assurance to our management and board of directors regarding the preparation and fair presentation of published financial statements.

Management has assessed the effectiveness of our internal control over financial reporting as of December 31, 2022. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in *Internal Control — Integrated Framework* (2013). Based on management's assessment utilizing these criteria we believe that, as of December 31, 2022, our internal control over financial reporting was effective.

Our independent auditors, KPMG LLP, have audited our internal control over financial reporting as stated in their report on page F-2.

Item 9B. Other Information.

On January 26, 2023, Charter entered into an employment agreement (the “Fischer Employment Agreement”) with Jessica Fischer, our Chief Financial Officer.

The Fischer Employment Agreement, which is effective as of February 5, 2023, has a term ending February 5, 2025 (or upon an earlier termination of employment) and provides that Ms. Fischer will continue to serve as Chief Financial Officer. The Fischer Employment Agreement provides that Ms. Fischer will receive an annual base salary of at least \$800,000 and a target annual cash bonus opportunity of 150% of her annual base salary.

Ms. Fischer will also continue to participate in our employee benefit plans and receive perquisites as generally provided to our other senior executives. In addition, consistent with Ms. Fischer’s prior employment agreement, we will continue to reimburse Ms. Fischer for all reasonable and necessary expenses incurred in connection with the performance of her duties.

If the employment of Ms. Fischer is terminated involuntarily by us without cause or by her for good reason, she would be entitled to (a) a cash severance payment equal to two times the sum of her annual base salary and target annual bonus opportunity for the year in which the termination occurs, (b) a cash payment equal to the cost of COBRA coverage for 24 months, and (c) outplacement services for up to 12 months.

The termination benefits described above are subject to Ms. Fischer’s execution of a release of claims in favor of Charter and its affiliates. In addition, Ms. Fischer has agreed to comply with covenants concerning non-disclosure of confidential information, assignment of intellectual property and non-disparagement of Charter and, for two years following termination, covenants concerning non-competition and non-solicitation of customers of Charter and its affiliates and, for one year following termination, covenants concerning non-solicitation of employees of Charter and its affiliates.

A copy of the Fischer Employment Agreement is filed herewith as Exhibit 10.71(b), and is incorporated herein by reference. The foregoing description of the Fischer Employment Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of that document.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Item 10. *Directors, Executive Officers and Corporate Governance.*

The information required by Item 10 will be included in the Proxy Statement under the headings “Proposal No. 1: Election of Directors,” “Delinquent Section 16(a) Reports,” and “Code of Ethics,” or in amendment to this Annual Report on Form 10-K and is incorporated herein by reference.

Item 11. *Executive Compensation.*

The information required by Item 11 will be included in the Proxy Statement under the headings “Compensation Discussion and Analysis,” “Proposal No. 1: Election of Directors – 2022 Director Compensation,” “Compensation Committee Interlocks and Insider Participation” and “Report of the Compensation and Benefits Committee” or in an amendment to this Annual Report on Form 10-K and is incorporated herein by reference. Information contained in the Proxy Statement or an amendment to this Annual Report on Form 10-K under the caption “Report of the Compensation and Benefits Committee” is furnished and not deemed filed with the SEC.

Item 12. *Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.*

The information required by Item 12 will be included in the Proxy Statement under the heading “Certain Beneficial Owners of Charter Class A Common Stock” or in amendment to this Annual Report on Form 10-K and is incorporated herein by reference.

Item 13. *Certain Relationships and Related Transactions, and Director Independence.*

The information required by Item 13 will be included in the Proxy Statement under the heading “Certain Relationships and Related Transactions” and “Proposal No. 1: Election of Directors” or in amendment to this Annual Report on Form 10-K and is incorporated herein by reference.

Item 14. *Principal Accountant Fees and Services.*

The information required by Item 14 will be included in the Proxy Statement under the heading “Accounting Matters” or in amendment to this Annual Report on Form 10-K and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a) The following documents are filed as part of this annual report:

(1) Financial Statements.

A listing of the financial statements, notes and reports of independent public accountants required by "Part II. Item 8. Financial Statements and Supplementary Data" begins on page F-1 of this annual report.

(2) Financial Statement Schedules.

No financial statement schedules are required to be filed by Items 8 and 15(c) because they are not required or are not applicable, or the required information is set forth in the applicable financial statements or notes thereto.

(3) The index to the exhibits begins on page E-1 of this annual report.

Item 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, Charter Communications, Inc. has duly caused this annual report to be signed on its behalf by the undersigned, thereunto duly authorized.

CHARTER COMMUNICATIONS, INC.,
Registrant

By: /s/ Christopher L. Winfrey
Christopher L. Winfrey
President and Chief Executive Officer

Date: January 27, 2023

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Richard R. Dykhouse and Kevin D. Howard, and each of them (with full power to each of them to act alone), his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign on his or her behalf individually and in each capacity stated below any and all amendments (including post-effective amendments) to this annual report, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents and either of them, or their substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of Charter Communications, Inc. and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Christopher L. Winfrey</u> Christopher L. Winfrey	President and Chief Executive Officer (Principal Executive Officer)	January 27, 2023
<u>/s/ Jessica M. Fischer</u> Jessica M. Fischer	Chief Financial Officer (Principal Financial Officer)	January 27, 2023
<u>/s/ Kevin D. Howard</u> Kevin D. Howard	Executive Vice President, Chief Accounting Officer and Controller (Principal Accounting Officer)	January 27, 2023
<u>/s/ Thomas M. Rutledge</u> Thomas M. Rutledge	Executive Chairman and Director	January 27, 2023
<u>/s/ Eric L. Zinterhofer</u> Eric L. Zinterhofer	Director	January 27, 2023
<u>/s/ W. Lance Conn</u> W. Lance Conn	Director	January 27, 2023
<u>/s/ Kim C. Goodman</u> Kim C. Goodman	Director	January 27, 2023
<u>/s/ Craig A. Jacobson</u> Craig A. Jacobson	Director	January 27, 2023
<u>/s/ Gregory Maffei</u> Gregory Maffei	Director	January 27, 2023
<u>/s/ John D. Markley, Jr.</u> John D. Markley, Jr.	Director	January 27, 2023
<u>/s/ David C. Merritt</u> David C. Merritt	Director	January 27, 2023
<u>/s/ James E. Meyer</u> James E. Meyer	Director	January 27, 2023
<u>/s/ Steve Miron</u> Steve Miron	Director	January 27, 2023
<u>/s/ Balan Nair</u> Balan Nair	Director	January 27, 2023
<u>/s/ Michael Newhouse</u> Michael Newhouse	Director	January 27, 2023
<u>/s/ Mauricio Ramos</u> Mauricio Ramos	Director	January 27, 2023

Exhibit Index

Exhibits are listed by numbers corresponding to the Exhibit Table of Item 601 in Regulation S-K.

Exhibit	Description
2.1	<u>Agreement and Plan of Mergers, dated as of May 23, 2015, among Time Warner Cable Inc., Charter Communications, Inc., CCH I, LLC, Nina Corporation I, Inc., Nina Company II, LLC and Nina Company III, LLC (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 29, 2015 (File No. 001-33664)).</u>
2.2	<u>Contribution Agreement, dated March 31, 2015, by and among Advance/Newhouse Partnership, A/NPC Holdings LLC, Charter Communications, Inc., CCH I, LLC, and Charter Communications Holding Company, LLC (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 1, 2015 (File No. 001-33664)).</u>
3.1	<u>Amended and Restated Certificate of Incorporation of Charter Communications, Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 19, 2016 (File No. 001-33664)).</u>
3.2	<u>Amended and Restated By-laws of Charter Communications, Inc. as of July 26, 2022 (incorporated by reference to Exhibit 3.1 to the Quarterly Report on Form 10-Q filed by Charter Communications, Inc. on July 29, 2022 (File No. 001-33664)).</u>
4.1(a)	<u>Amended and Restated Stockholders Agreement, dated March 31, 2015, by and among Charter Communications, Inc., Liberty Broadband Corporation and Advance/Newhouse Partnership (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 1, 2015 (File No. 001-33664)).</u>
4.1(b)	<u>Second Amended and Restated Stockholders Agreement, dated May 23, 2015, by and among Charter Communications, Inc., CCH I, LLC, Liberty Broadband Corporation and Advance/Newhouse Partnership (incorporated by reference to Annex C to the registration statement on Form S-4 filed by CCH I, LLC on June 26, 2015 (File No. 333-205240)).</u>
4.2	<u>Indenture dated as of November 5, 2014, by and among CCO Holdings, LLC, CCO Holdings Capital Corp. and CCOH Safari, LLC, as Issuers, Charter Communications, Inc., as Parent Guarantor, and The Bank of New York Mellon Trust Company, N.A., as Trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on November 10, 2014 (File No. 001-33664)).</u>
4.3	<u>Indenture, dated as of July 23, 2015, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp. and CCO Safari II, LLC, as issuers, and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 (File No. 001-33664)).</u>
4.4	<u>First Supplemental Indenture, dated as of July 23, 2015, among CCO Safari II, LLC, as escrow issuer, CCH II, LLC, as limited guarantor, and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 (File No. 001-33664)).</u>
4.5	<u>Form of 4.908% Senior Secured Notes due 2025 (incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 (File No. 001-33664)).</u>
4.6	<u>Form of 6.384% Senior Secured Notes due 2035 (incorporated by reference to Exhibit 4.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 (File No. 001-33664)).</u>
4.7	<u>Form of 6.484% Senior Secured Notes due 2045 (incorporated by reference to Exhibit 4.7 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 (File No. 001-33664)).</u>
4.8	<u>Form of 6.834% Senior Secured Notes due 2055 (incorporated by reference to Exhibit 4.8 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 (File No. 001-33664)).</u>
4.9	<u>Indenture, dated as of November 20, 2015, among CCO Holdings, LLC, CCO Holdings Capital Corp. and CCOH Safari, LLC, as issuers, and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on November 25, 2015 (File No. 001-33664)).</u>
4.10	<u>Seventh Supplemental Indenture, dated as of April 21, 2016, among CCO Holdings, LLC, CCO Holdings Capital Corp., Charter Communications, Inc., as guarantor and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 27, 2016 (File No. 001-33664)).</u>
4.11	<u>Form of 5.500% Senior Notes due 2026 (incorporated herein by reference to Exhibit 4.2 to the Current Report on Form 8-K of Charter Communications, Inc. filed April 27, 2016).</u>

- 4.12 [Second Supplemental Indenture, dated as of May 18, 2016, by and among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., CCO Safari II, LLC and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 24, 2016 \(File No. 001-33664\)\).](#)
- 4.13 [Third Supplemental Indenture, dated as of May 18, 2016, by and among CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 24, 2016 \(File No. 001-33664\)\).](#)
- 4.14 [Second Supplemental Indenture, dated as of May 18, 2016, by and among CCO Holdings, LLC, CCO Holdings Capital Corp., CCOH Safari, LLC and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 24, 2016 \(File No. 001-33664\)\).](#)
- 4.15 [Third Supplemental Indenture, dated as of February 6, 2017, among CCO Holdings, LLC, CCO Holdings Capital Corp., and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated herein by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on February 6, 2017 \(File No. 001-33664\)\).](#)
- 4.16 [Form of 5.125% Senior Notes due 2027 \(incorporated herein by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on February 6, 2017 \(File No. 001-33664\)\).](#)
- 4.17 [Fifth Supplemental Indenture, dated as of April 20, 2017, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 26, 2017 \(File No. 001-33664\)\).](#)
- 4.18 [Form of 5.375% Senior Secured Notes due 2047 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 26, 2017 \(File No. 001-33664\)\).](#)
- 4.19 [Sixth Supplemental Indenture, dated as of July 6, 2017, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 12, 2017 \(File No. 001-33664\)\).](#)
- 4.20 [Form of 3.750% Senior Secured Notes due 2028 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 12, 2017 \(File No. 001-33664\)\).](#)
- 4.21 [Fourth Supplemental Indenture, dated as of August 8, 2017, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 14, 2017 \(File No. 001-33664\)\).](#)
- 4.22 [Form of 5.000% Senior Notes due 2028 \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 14, 2017 \(File No. 001-33664\)\).](#)
- 4.23 [Seventh Supplemental Indenture, dated as of September 18, 2017, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2017 \(File No. 001-33664\)\).](#)
- 4.24 [Form of 4.200% Senior Secured Notes due 2028 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2017 \(File No. 001-33664\)\).](#)
- 4.25 [Fifth Supplemental Indenture, dated as of October 17, 2017, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 20, 2017 \(File No. 001-33664\)\).](#)
- 4.26 [Form of 4.000% Senior Notes due 2023 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 20, 2017 \(File No. 001-33664\)\).](#)
- 4.27 [Eighth Supplemental Indenture, dated as of December 21, 2017, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., CCO Holdings, LLC, the subsidiary guarantor parties thereto and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.5 to Form S-3 filed by Charter Communications, Inc. on December 22, 2017 \(File No. 333-222241\)\).](#)
- 4.28 [Ninth Supplemental Indenture, dated as of April 17, 2018, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 20, 2018 \(File No. 001-33664\)\).](#)
- 4.29 [Form of 5.375% Senior Secured Notes due 2038 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 20, 2018 \(File No. 001-33664\)\).](#)

- 4.30 [Form of 5.750% Senior Secured Notes due 2048 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 20, 2018 \(File No. 001-33664\)\).](#)
- 4.31 [Tenth Supplemental Indenture, dated as of July 3, 2018, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 9, 2018 \(File No. 001-33664\)\).](#)
- 4.32 [Form of Senior Secured Floating Notes due 2024 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 9, 2018 \(File No. 001-33664\)\).](#)
- 4.33 [Form of 4.500% Senior Secured Notes due 2024 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 9, 2018 \(File No. 001-33664\)\).](#)
- 4.34 [Twelfth Supplemental Indenture, dated as of January 17, 2019, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 24, 2019 \(File No. 001-33664\)\).](#)
- 4.35 [Form of 5.050% Senior Secured Notes due 2029 \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 24, 2019 \(File No. 001-33664\)\).](#)
- 4.36 [Indenture, dated as of May 23, 2019, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 30, 2019 \(File No. 001-33664\)\).](#)
- 4.37 [First Supplemental Indenture, dated as of May 23, 2019, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 30, 2019 \(File No. 001-33664\)\).](#)
- 4.38 [Form of 5.375% Senior Notes due 2029 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 30, 2019 \(File No. 001-33664\)\).](#)
- 4.39 [Fourteenth Supplemental Indenture, dated as of July 10, 2019, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 10, 2019 \(File No. 001-33664\)\).](#)
- 4.40 [Form of 5.125% Senior Secured Notes due 2049 \(incorporated by reference to Exhibit 4.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 10, 2019 \(File No. 001-33664\)\).](#)
- 4.41 [Second Supplemental Indenture, dated as of October 1, 2019, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 7, 2019\).](#)
- 4.42 [Form of 4.750% Senior Notes due 2030 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 7, 2019 \(File No. 001-33664\)\).](#)
- 4.43 [Fifteenth Supplemental Indenture, dated as of October 24, 2019, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 30, 2019 \(File No. 001-33664\)\).](#)
- 4.44 [Form of 4.800% Senior Secured Notes due 2050 \(incorporated by reference to Exhibit 4.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 30, 2019 \(File No. 001-33664\)\).](#)
- 4.45 [Third Supplemental Indenture, dated as of February 18, 2020, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on February 21, 2020 \(File No. 001-33664\)\).](#)
- 4.46 [Form of 4.500% Senior Notes due 2030 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on February 21, 2020 \(File No. 001-33664\)\).](#)
- 4.47 [Fourth Supplemental Indenture, dated as of March 18, 2020, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 23, 2020 \(File No. 001-33664\)\).](#)
- 4.48 [Form of 4.500% Senior Notes due 2032 \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 23, 2020 \(File No. 001-33664\)\).](#)

- 4.49 [Sixteenth Supplemental Indenture, dated as of April 17, 2020, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 17, 2020 \(File No. 001-33664\)\).](#)
- 4.50 [Form of 2.800% Senior Secured Notes due 2031 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 17, 2020 \(File No. 001-33664\)\).](#)
- 4.51 [Form of 3.700% Senior Secured Notes due 2051 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 17, 2020 \(File No. 001-33664\)\).](#)
- 4.52 [Fifth Supplemental Indenture, dated as of July 9, 2020, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 13, 2020 \(File No. 001-33664\)\).](#)
- 4.53 [Form of 4.250% Senior Notes due 2031 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 13, 2020 \(File No. 001-33664\)\).](#)
- 4.54 [Eighteenth Supplemental Indenture, dated as of December 4, 2020, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on December 4, 2020 \(File No. 001-33664\)\).](#)
- 4.55 [Form of 2.300% Senior Secured Notes due 2032 \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on December 4, 2020 \(File No. 001-33664\)\).](#)
- 4.56 [Form of 3.850% Senior Secured Notes due 2061 \(incorporated by reference to Exhibit 4.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on December 4, 2020 \(File No. 001-33664\)\).](#)
- 4.57 [Nineteenth Supplemental Indenture, dated as of March 4, 2021, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 4, 2021 \(File No. 001-33664\)\).](#)
- 4.58 [Form of 3.500% Senior Secured Notes due 2041 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 4, 2021 \(File No. 001-33664\)\).](#)
- 4.59 [Form of 3.900% Senior Secured Notes due 2052 \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 4, 2021 \(File No. 001-33664\)\).](#)
- 4.60 [Sixth Supplemental Indenture, dated as of April 22, 2021, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 27, 2021 \(File No. 001-33664\)\).](#)
- 4.61 [Form of 4.500% Senior Notes due 2033 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 27, 2021 \(File No. 001-33664\)\).](#)
- 4.62 [Twentieth Supplemental Indenture, dated as of June 2, 2021, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on June 2, 2021, 2021 \(File No. 001-33664\)\).](#)
- 4.63 [Form of 4.400% Senior Notes due 2061 \(incorporated by reference to Exhibit 4.8 to the Current Report on Form 8-K filed by Charter Communications, Inc. on June 2, 2021, 2021 \(File No. 001-33664\)\).](#)
- 4.64 [Seventh Supplemental Indenture, dated as of August 16, 2021, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 18, 2021 \(File No. 001-33664\)\).](#)
- 4.65 [Form of 4.250% Senior Notes due 2034 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 18, 2021 \(File No. 001-33664\)\).](#)
- 4.66 [Twenty-First Supplemental Indenture, dated as of October 12, 2021, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 12, 2021 \(File No. 001-33664\)\).](#)
- 4.67 [Form of 2.250% Senior Secured Notes due 2029 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 12, 2021 \(File No. 001-33664\)\).](#)

- 4.68 [Form of 3.500% Senior Secured Notes due 2042 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 12, 2021 \(File No. 001-33664\)\).](#)
- 4.69 [Form of 3.950% Senior Secured Notes due 2062 \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 12, 2021 \(File No. 001-33664\)\).](#)
- 4.70 Eighth Supplemental Indenture, dated as of January 19, 2022, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee, (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 25, 2022 (File No. 001-33664)).
- 4.71 [Form of 4.750% Senior Notes due 2032 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 25, 2022 \(File No. 001-33664\)\).](#)
- 4.72 [Twenty-Second Supplemental Indenture, dated as of March 15, 2022, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., as issuers, CCO Holdings, LLC, the subsidiary guarantors party thereto and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent, \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 15, 2022 \(File No. 001-33664\)\).](#)
- 4.73 [Form of 4.400% Senior Notes due 2033 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 15, 2022 \(File No. 001-33664\)\).](#)
- 4.74 [Form of 5.250% Senior Notes due 2053 \(incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 15, 2022 \(File No. 001-33664\)\).](#)
- 4.75 [Form of 5.500% Senior Notes due 2063 \(incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 15, 2022 \(File No. 001-33664\)\).](#)
- 4.76 [Ninth Supplemental Indenture, dated as of August 9, 2022, among CCO Holdings, LLC, CCO Holdings Capital Corp. and The Bank of New York Mellon Trust Company, N.A., as trustee \(incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 15, 2022 \(File No. 001-33664\)\).](#)
- 4.77 [Form of 6.375% Senior Notes due 2029 \(incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 15, 2022 \(File No. 001-33664\)\).](#)
- 4.78 Indenture, dated as of April 30, 1992 (the "TWCE Indenture"), as amended by the First Supplemental Indenture, dated as of June 30, 1992, among Time Warner Entertainment Company, L.P. ("TWE"), Time Warner Companies, Inc. ("TWCI"), certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee (incorporated herein by reference to Exhibits 10(g) and 10(h) to TWCI's Current Report on Form 8-K dated June 26, 1992 and filed with the SEC on July 15, 1992 (File No. 1-8637)). (P)
- 4.79 Second Supplemental Indenture to the TWCE Indenture, dated as of December 9, 1992, among TWE, TWCI, certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 4.2 to Amendment No. 1 to TWE's Registration Statement on Form S-4 dated and filed with the SEC on October 25, 1993 (Registration No. 33-67688) (the "TWE October 25, 1993 Registration Statement")). (P)
- 4.80 Third Supplemental Indenture to the TWCE Indenture, dated as of October 12, 1993, among TWE, TWCI, certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 4.3 to the TWE October 25, 1993 Registration Statement). (P)
- 4.81 Fourth Supplemental Indenture to the TWCE Indenture, dated as of March 29, 1994, among TWE, TWCI, certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 4.4 to TWE's Annual Report on Form 10-K for the year ended December 31, 1993 and filed with the SEC on March 30, 1994 (File No. 1-12878)). (P)
- 4.82 Fifth Supplemental Indenture to the TWCE Indenture, dated as of December 28, 1994, among TWE, TWCI, certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 4.5 to TWE's Annual Report on Form 10-K for the year ended December 31, 1994 and filed with the SEC on March 30, 1995 (File No. 1-12878)). (P)
- 4.83 [Sixth Supplemental Indenture to the TWCE Indenture, dated as of September 29, 1997, among TWE, TWCI, certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee \(incorporated herein by reference to Exhibit 4.7 to Historic TW Inc.'s \("Historic TW"\) Annual Report on Form 10-K for the year ended December 31, 1997 and filed with the SEC on March 25, 1998 \(File No. 1-12259\) \(the "Time Warner 1997 Form 10-K"\)\).](#)
- 4.84 [Seventh Supplemental Indenture to the TWCE Indenture, dated as of December 29, 1997, among TWE, TWCI, certain of TWCI's subsidiaries that are parties thereto and The Bank of New York, as Trustee \(incorporated herein by reference to Exhibit 4.8 to the Time Warner 1997 Form 10-K\).](#)
- 4.85 [Eighth Supplemental Indenture to the TWCE Indenture, dated as of December 9, 2003, among Historic TW, TWE, Warner Communications Inc. \("WCI"\), American Television and Communications Corporation \("ATC"\), TWC and The Bank of New York, as Trustee \(incorporated herein by reference to Exhibit 4.10 to Time Warner Inc.'s \("Time Warner"\) Annual Report on Form 10-K for the year ended December 31, 2003 \(File No. 1-15062\)\).](#)

4.86	<u>Ninth Supplemental Indenture to the TWCE Indenture, dated as of November 1, 2004, among Historic TW, TWE, Time Warner NY Cable Inc., WCL, ATC, TWC and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 4.1 to Time Warner's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004 (File No. 1-15062)).</u>
4.87	<u>Tenth Supplemental Indenture to the TWCE Indenture, dated as of October 18, 2006, among Historic TW, TWE, TW NY Cable Holding Inc. ("TW NY"), Time Warner NY Cable LLC ("TW NY Cable"), TWC, WCL, ATC and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 4.1 to Time Warner's Current Report on Form 8-K dated and filed October 18, 2006 (File No. 1-15062)).</u>
4.88	<u>Eleventh Supplemental Indenture to the TWCE Indenture, dated as of November 2, 2006, among TWE, TW NY, TWC and The Bank of New York, as Trustee (incorporated herein by reference to Exhibit 99.1 to Time Warner's Current Report on Form 8-K dated and filed November 2, 2006 (File No. 1-15062)).</u>
4.89	<u>Twelfth Supplemental Indenture to the TWCE Indenture, dated as of September 30, 2012, among Time Warner Cable Enterprises LLC ("TWCE"), TWC, TW NY, Time Warner Cable Internet Holdings II LLC ("TWC Internet Holdings II") and The Bank of New York Mellon, as trustee, supplementing the Indenture dated April 30, 1992, as amended (incorporated herein by reference to Exhibit 4.2 to TWC's Current Report on Form 8-K dated September 30, 2012 and filed with the SEC on October 1, 2012 (File No. 1-33335) (the "TWC September 30, 2012 Form 8-K")).</u>
4.90	<u>Thirteenth Supplemental Indenture, dated as of May 18, 2016, by and among Time Warner Cable Enterprises LLC, the guarantors party thereto and The Bank of New York Mellon (formerly known as The Bank of New York), as trustee (incorporated by reference to Exhibit 4.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 24, 2016 (File No. 001-33664)).</u>
4.91	<u>Indenture, dated as of April 9, 2007 (the "TWC Indenture"), among TWC, TW NY, TWE and The Bank of New York, as trustee (incorporated herein by reference to Exhibit 4.1 to TWC's Current Report on Form 8-K dated April 4, 2007 and filed with the SEC on April 9, 2007 (File No. 1-33335) (the "TWC April 4, 2007 Form 8-K")).</u>
4.92	<u>First Supplemental Indenture to the TWC Indenture, dated as of April 9, 2007, among TWC, TW NY, TWE and The Bank of New York, as trustee (incorporated herein by reference to Exhibit 4.2 to the TWC April 4, 2007 Form 8-K).</u>
4.93	<u>Second Supplemental Indenture to the TWC Indenture, dated as of September 30, 2012, among TWC, TW NY, TWCE, TWC Internet Holdings II and The Bank of New York Mellon, as trustee, supplementing the Indenture dated April 9, 2007, as amended (incorporated herein by reference to Exhibit 4.1 to the TWC September 30, 2012 Form 8-K).</u>
4.94	<u>Third Supplemental Indenture, dated as of May 18, 2016, by and among Time Warner Cable Inc., TWC NewCo LLC and The Bank of New York Mellon (formerly known as The Bank of New York), as trustee (incorporated by reference to Exhibit 4.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 24, 2016 (File No. 001-33664)).</u>
4.95	<u>Fourth Supplemental Indenture, dated as of May 18, 2016, by and among TWC NewCo LLC, the guarantors party thereto and The Bank of New York Mellon (formerly known as The Bank of New York), as trustee (incorporated by reference to Exhibit 4.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 24, 2016 (File No. 001-33664)).</u>
4.96	<u>Form of TWC 6.55% Exchange Debentures due 2037 (included as Exhibit C to the First Supplemental Indenture incorporated herein by reference to Exhibit 4.2 to the TWC April 4, 2007 Form 8-K).</u>
4.97	<u>Form of TWC 7.30% Debentures due 2038 (incorporated herein by reference to Exhibit 4.3 to the TWC June 16, 2008 Form 8-K).</u>
4.98	<u>Form of TWC 6.75% Debentures due 2039 (incorporated herein by reference to Exhibit 4.1 to TWC's Current Report on Form 8-K dated June 24, 2009 and filed with the SEC on June 29, 2009 (File No. 1-33335)).</u>
4.99	<u>Form of TWC 5.875% Debentures due 2040 (incorporated herein by reference to Exhibit 4.2 to the TWC November 9, 2010 Form 8-K).</u>
4.100	<u>Form of TWC 5.75% Note due 2031 (incorporated herein by reference to Exhibit 4.1 to TWC's Current Report on Form 8-K dated and filed with the SEC on May 26, 2011 (File No. 1-33335)).</u>
4.101	<u>Form of TWC 5.5% Debenture due 2041 (incorporated herein by reference to Exhibit 4.2 to the TWC Current Report on Form 8-K dated September 7, 2011 and filed with the SEC on September 12, 2011 (File No. 1-33335)).</u>
4.102	<u>Form of TWC 4.5% Debenture due 2042 (incorporated herein by reference to Exhibit 4.1 to TWC's Current Report on Form 8-K dated August 7, 2012 and filed with the SEC on August 10, 2012 (File No. 1-33335)).</u>
4.103	<u>Form of TWC 5.25% Note due 2042 (incorporated herein by reference to Exhibit 4.1 to TWC's Current Report on Form 8-K dated and filed with the SEC on June 27, 2012 (File No. 1-33335)).</u>
4.104*	<u>Description of Securities.</u>

- 10.1 [Exchange and Registration Rights Agreement, dated July 23, 2015 relating to the 3.579% Senior Secured Notes due 2020, 4.464% Senior Secured Notes due 2022, 4.908% Senior Secured Notes due 2025, 6.384% Senior Secured Notes due 2035, 6.484% Senior Secured Notes due 2045 and 6.834% Senior Secured Notes due 2055, between CCO Safari II, LLC and Goldman, Sachs & Co., Credit Suisse Securities \(USA\) LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Deutsche Bank Securities Inc. and UBS Securities LLC, as representatives of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 27, 2015 \(File No. 001-33664\)\).](#)
- 10.2 [Exchange and Registration Rights Agreement, dated April 21, 2016, relating to the 5.500% Senior Notes due 2026, among CCO Holdings, LLC, CCO Holdings Capital Corp., Charter Communications, Inc., as guarantor, and Merrill Lynch, Pierce, Fenner & Smith Incorporated, Citigroup Global Markets Inc., Credit Suisse Securities \(USA\) LLC, Deutsche Bank Securities Inc., Goldman, Sachs & Co., UBS Securities LLC and Wells Fargo Securities, LLC, as representatives of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 27, 2016 \(File No. 001-33664\)\).](#)
- 10.3 [Exchange and Registration Rights Agreement, dated February 6, 2017, relating to the 5.125% Senior Notes due 2027, among CCO Holdings, LLC, CCO Holdings Capital Corp., and Merrill Lynch, Pierce, Fenner & Smith Incorporated, Citigroup Global Markets Inc., Credit Suisse Securities \(USA\) LLC, Deutsche Bank Securities Inc., Goldman, Sachs & Co., UBS Securities LLC and Wells Fargo Securities, LLC, as representatives of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on February 6, 2017 \(File No. 001-33664\)\).](#)
- 10.4 [Exchange and Registration Rights Agreement, dated March 29, 2017, relating to the 5.125% Senior Notes due 2027, among CCO Holdings, LLC, CCO Holdings Capital Corp., and Deutsche Bank Securities Inc., Merrill Lynch, Pierce, Fenner & Smith Incorporated, Citigroup Global Markets Inc., Credit Suisse Securities \(USA\) LLC, Goldman, Sachs & Co., UBS Securities LLC and Wells Fargo Securities, LLC, as representatives of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 31, 2017 \(File No. 001-33664\)\).](#)
- 10.5 [Exchange and Registration Rights Agreement, dated April 20, 2017, relating to the 5.125% Senior Notes due 2027, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Citigroup Global Markets Inc., as a representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 26, 2017 \(File No. 001-33664\)\).](#)
- 10.6 [Exchange and Registration Rights Agreement, dated April 20, 2017, relating to the 5.375% Senior Notes due 2047, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and Citigroup Global Markets Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 26, 2017 \(File No. 001-33664\)\).](#)
- 10.7 [Exchange and Registration Rights Agreement, dated July 6, 2017, relating to the 3.750% Senior Notes due 2028, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 12, 2017 \(File No. 001-33664\)\).](#)
- 10.8 [Exchange and Registration Rights Agreement, dated July 6, 2017, relating to the 5.375% Senior Notes due 2047, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 12, 2017 \(File No. 001-33664\)\).](#)
- 10.9 [Exchange and Registration Rights Agreement, dated August 8, 2017, relating to the 5.000% Senior Notes due 2028, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 14, 2017 \(File No. 001-33664\)\).](#)
- 10.10 [Exchange and Registration Rights Agreement, dated September 18, 2017, relating to the 4.200% Senior Secured Notes due 2028, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Citigroup Global Markets Inc., as representatives of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2017 \(File No. 001-33664\)\).](#)
- 10.11 [Exchange and Registration Rights Agreement, dated September 18, 2017, relating to the 5.375% Senior Secured Notes due 2047, among Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., the guarantors party thereto and Merrill Lynch, Pierce, Fenner & Smith Incorporated and Citigroup Global Markets Inc., as representatives of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2017 \(File No. 001-33664\)\).](#)

- 10.12 [Exchange and Registration Rights Agreement, dated October 17, 2017, relating to the 5.000% Senior Notes due 2028, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 20, 2017 \(File No. 001-33664\)\).](#)
- 10.13 [Exchange and Registration Rights Agreement, dated October 17, 2017, relating to the 4.000% Senior Notes due 2023, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Merrill Lynch, Pierce, Fenner & Smith Incorporated, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 20, 2017 \(File No. 001-33664\)\).](#)
- 10.14 [Exchange and Registration Rights Agreement, dated May 23, 2019, relating to the 5.375% Senior Notes due 2029, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 30, 2019 \(File No. 001-33664\)\).](#)
- 10.15 [Exchange and Registration Rights Agreement, dated July 10, 2019, relating to the 5.375% Senior Notes due 2029, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 10, 2019 \(File No. 001-33664\)\).](#)
- 10.16 [Exchange and Registration Rights Agreement, dated October 1, 2019, relating to the 4.750% Senior Notes due 2030, among CCO Holdings, LLC, CCO Holdings Capital Corp. and BofA Securities, Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 7, 2019 \(File No. 001-33664\)\).](#)
- 10.17 [Exchange and Registration Rights Agreement, dated October 24, 2019, relating to the 4.750% Senior Notes due 2030, among CCO Holdings, LLC, CCO Holdings Capital Corp. and BofA Securities, Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 30, 2019 \(File No. 001-33664\)\).](#)
- 10.18 [Exchange and Registration Rights Agreement, dated December 16, 2019, relating to the 4.750% Senior Notes due 2030, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Citigroup Global Markets, Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on December 16, 2019 \(File No. 001-33664\)\).](#)
- 10.19 [Exchange and Registration Rights Agreement, dated February 18, 2020, relating to the 4.500% Senior Notes due 2030, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities, Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on February 21, 2020 \(File No. 001-33664\)\).](#)
- 10.20 [2030 Exchange and Registration Rights Agreement, dated March 18, 2020, relating to the 4.500% Senior Notes due 2030, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities, Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 23, 2020 \(File No. 001-33664\)\).](#)
- 10.21 [2032 Exchange and Registration Rights Agreement, dated March 18, 2020, relating to the 4.500% Senior Notes due 2032, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities, Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on March 23, 2020 \(File No. 001-33664\)\).](#)
- 10.22 [Exchange and Registration Rights Agreement, dated July 9, 2020, relating to the 4.250% Senior Notes due 2031, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Morgan Stanley & Co. LLC, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 13, 2020 \(File No. 001-33664\)\).](#)
- 10.23 [Exchange and Registration Rights Agreement, dated July 24, 2020, relating to the 4.250% Senior Notes due 2031, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Morgan Stanley & Co. LLC, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on July 28, 2020\) \(File No. 001-33664\)\).](#)
- 10.24 [Exchange and Registration Rights Agreement, dated October 12, 2020, relating to the 4.500% Senior Notes due 2032, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 16, 2020 \(File No. 001-33664\)\).](#)
- 10.25 [Exchange and Registration Rights Agreement, dated April 22, 2021, relating to the 4.500% Senior Notes due 2033, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on April 27, 2021 \(File No. 001-33664\)\).](#)

- 10.26 [Exchange and Registration Rights Agreement, dated June 2, 2021, relating to the 4.500% Senior Notes due 2033, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on June 2, 2021 \(File No. 001-33664\)\).](#)
- 10.27 [Exchange and Registration Rights Agreement, dated August 16, 2021, relating to the 4.250% Senior Notes due 2034, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Morgan Stanley & Co. LLC, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 18, 2021 \(File No. 001-33664\)\).](#)
- 10.28 [Exchange and Registration Rights Agreement, dated January 19, 2022, relating to the 4.750% Senior Notes due 2032, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Deutsche Bank Securities Inc., as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 25, 2022 \(File No. 001-33664\)\).](#)
- 10.29 [Exchange and Registration Rights Agreement, dated August 9, 2022, relating to the 6.375% Senior Notes due 2029, among CCO Holdings, LLC, CCO Holdings Capital Corp. and Morgan Stanley & Co. LLC, as representative of the several Purchasers \(as defined therein\) \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on August 15, 2022 \(File No. 001-33664\)\).](#)
- 10.30(a) [Restatement Agreement dated as of May 18, 2016, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, the subsidiary guarantors party thereto, Bank of America, N.A., as administrative agent and the lenders party thereto \(incorporated by reference to Exhibit 10.5 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 24, 2016 \(File No. 001-33664\)\).](#)
- 10.30(b) [Amendment No. 1 dated as of December 23, 2016, to the Amended and Restated Credit Agreement dated as of March 18, 1999, as amended and restated on May 18, 2016, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, the Lenders Party thereto and Bank of America, N.A., as Administrative Agent \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on December 30, 2016 \(File No. 001-33664\)\).](#)
- 10.30(c) [Restatement Agreement dated as of December 21, 2017 to the Amended and Restated Credit Agreement dated as of March 18, 1999, as amended and restated on May 18, 2016, as amended by Amendment No. 1, dated as of December 23, 2016 and as further amended by that certain Incremental Activation Notice No. 1, dated as of January 19, 2017, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, the Lenders Party thereto and Bank of America, N.A., as Administrative Agent \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on December 28, 2017 \(File No. 001-33664\)\).](#)
- 10.30(d) [Amendment No. 1, dated as of January 24, 2019, to \(i\) the Amended and Restated Credit Agreement, dated as of March 18, 1999, as amended and restated on December 21, 2017, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, certain subsidiaries of Charter Communications Operating, LLC, the lenders party thereto and Bank of America, N.A., as Administrative Agent and \(ii\) the Guarantee and Collateral Agreement, dated as of March 18, 1999, as amended and restated as of March 31, 2010, as further amended and restated on May 18, 2016, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, certain subsidiaries of Charter Communications Operating, LLC and Bank of America, N.A., as Administrative Agent \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 30, 2019 \(File No. 001-33664\)\).](#)
- 10.30(e) [Restatement Agreement, dated as of April 26 2019, to the Amended and Restated Credit Agreement, dated as of March 18, 1999, as amended and restated on December 21, 2017 and as amended by Amendment No. 1 as of January 24, 2019, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, certain subsidiaries of Charter Communications Operating, LLC, the lenders party thereto and Bank of America, N.A., as Administrative Agent \(incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q of Charter Communications, Inc. filed April 30, 2019 \(File No. 001-33664\)\).](#)
- 10.30(f) [Amendment No. 1, dated as of October 24, 2019, to the Amended and Restated Credit Agreement, dated as of March 18, 1999, as amended and restated on April 26, 2019, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, certain subsidiaries of Charter Communications Operating, LLC, the lenders party thereto and Bank of America, N.A., as administrative agent \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on October 30, 2019 \(File No. 001-33664\)\).](#)
- 10.30(g) [Amendment No. 2, dated as of May 26, 2022, to \(i\) the Amended and Restated Credit Agreement, dated as of March 18, 1999, as amended and restated on April 26, 2019 and as amended by Amendment No. 1 on October 24, 2019, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, certain subsidiaries of Charter Communications Operating, LLC, the lenders party thereto and Bank of America, N.A., as administrative agent and \(ii\) the Amended and Restated Guarantee and Collateral Agreement, dated as of March 18, 1999, as amended and restated as of March 6, 2007, as amended and restated as of March 31, 2010, as amended and restated as of May 18, 2016 and as further amended as of January 24, 2019, by Charter Communications Operating, LLC, CCO Holdings, LLC, certain subsidiaries of Charter Communications Operating, LLC and the Bank of America, N.A., as administrative agent \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on June 2, 2022 \(File No. 001-33664\)\).](#)

- 10.31 [Joinder Agreement to Registration Rights Agreement, dated as of May 18, 2016, by and among CCO Safari II, LLC, CCH II, LLC, Charter Communications Operating, LLC, Charter Communications Operating Capital Corp., CCO Holdings, LLC and the other guarantors party thereto \(incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed May 24, 2016\).](#)
- 10.32 [Joinder Agreement to Registration Rights Agreement, dated as of May 18, 2016, by CCO Holdings, LLC and CCO Holdings Capital Corp. \(incorporated herein by reference to Exhibit 10.2 to the Current Report on Form 8-K of Charter Communications, Inc. filed May 24, 2016\).](#)
- 10.33 [Escrow Assumption Agreement, dated as of May 18, 2016, by and among CCO Safari III, LLC, Charter Communications Operating, LLC, Bank of America, N.A., as escrow administrative agent and Bank of America, N.A., as administrative agent \(incorporated herein by reference to Exhibit 10.3 to the Current Report on Form 8-K of Charter Communications, Inc. filed May 24, 2016\).](#)
- 10.34 [Incremental Activation Notice, dated as of May 18, 2016, by and among Charter Communications Operating, LLC, CCO Holdings, LLC, the subsidiary guarantors party thereto, Bank of America, N.A., as administrative agent and the lenders party thereto \(incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 24, 2016 \(File No. 001-33664\)\).](#)
- 10.35 [Collateral Agreement, dated as of May 18, 2016, by Charter Communications Operating, LLC, Charter Communications Operating Capital Corp. and the other grantors party thereto in favor of The Bank of New York Mellon Trust Company, N.A., as collateral agent \(incorporated by reference to Exhibit 10.6 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 24, 2016 \(File No. 001-33664\)\).](#)
- 10.36 [First Lien Intercreditor Agreement, dated as of May 18, 2016, by and among Charter Communications Operating, LLC, the other grantors party thereto, Bank of America, N.A., as credit agreement collateral agent for the credit agreement secured parties, The Bank of New York Mellon Trust Company, N.A., as notes collateral agent for the indenture secured parties, and each additional agent from time to time party thereto \(incorporated by reference to Exhibit 10.7 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 24, 2016 \(File No. 001-33664\)\).](#)
- 10.37 [Amended and Restated Limited Liability Company Agreement of Charter Communications Holdings, LLC, dated as of May 18, 2016, by and among Charter Holdings, Charter, CCH II, LLC, Advance/Newhouse Partnership and the other party or parties thereto \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 19, 2016 \(File No. 001-33664\)\).](#)
- 10.38 [Exchange Agreement, dated as of May 18, 2016, by and among Charter Holdings, Charter, Advance/Newhouse Partnership and the other party or parties thereto \(incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 19, 2016 \(File No. 001-33664\)\).](#)
- 10.39 [Registration Rights Agreement, dated as of May 18, 2016, by and among Charter, Advance/Newhouse Partnership and Liberty Broadband \(incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 19, 2016 \(File No. 001-33664\)\).](#)
- 10.40 [Tax Receivables Agreement, dated as of May 18, 2016, by and among Charter, Advance/Newhouse Partnership and the other party or parties thereto \(incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 19, 2016 \(File No. 001-33664\)\).](#)
- 10.41 [Wireless Operational Cooperation Agreement dated as of May 5, 2017 between Charter Communications, Inc. and Comcast Corporation \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on May 8, 2017 \(File No. 001-33664\)\).](#)
- 10.42+ [Charter Communications, Inc. Executive Bonus Plan \(incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of Charter Communications, Inc. filed on May 8, 2012 \(File No. 001-33664\)\).](#)
- 10.43+ [Form of First Amended and Restated Indemnification Agreement \(incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q of Charter Communications, Inc. filed on August 6, 2013 \(File No. 001-33664\)\).](#)
- 10.44+ [Charter Communications, Inc. 2016 Executive Incentive Performance Plan \(incorporated by reference to Appendix A to the proxy statement for the Charter Communications, Inc. 2016 Annual Meeting of Stockholders filed March 17, 2016 \(File No. 001-33664\)\).](#)
- 10.45+ [Charter Communications, Inc. Amended and Restated 2009 Stock Incentive Plan \(incorporated by reference to Exhibit 10.6 to the Current Report on Form 8-K of Charter Communications, Inc. filed on May 19, 2016 \(File No. 001-33664\)\).](#)
- 10.46+ [Amendment to the Charter Communications, Inc. Amended and Restated 2009 Stock Incentive Plan, dated as of October 25, 2016 \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on October 28, 2016 \(File No. 001-33664\)\).](#)
- 10.47+ [Charter Communications, Inc.'s Amended and Restated Supplemental Deferred Compensation Plan, dated as of September 1, 2011 \(incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 2, 2011 \(File No. 001-33664\)\).](#)

10.48+	<u>Form of Non-Qualified Time Vesting Stock Option Agreement dated April 26, 2011 (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q filed by Charter Communications, Inc. on August 2, 2011 (File No. 001-33664)).</u>
10.49+	<u>Form of Non-Qualified Price Vesting Stock Option Agreement dated April 26, 2011 (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by Charter Communications, Inc. on August 2, 2011 (File No. 001-33664)).</u>
10.50+	<u>Form of Notice of LTIP Award Agreement Changes (RSU Awards) (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 22, 2014 (File No. 001-33664)).</u>
10.51+	<u>Form of Notice of LTIP Award Agreement Changes (Time-Vesting Option Awards) (incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 22, 2014 (File No. 001-33664)).</u>
10.52+	<u>Form of Notice of LTIP Award Agreement Changes (Restricted Stock Awards) (incorporated by reference to Exhibit 10.5 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 22, 2014 (File No. 001-33664)).</u>
10.53+	<u>Form of Notice of LTIP Award Agreement Changes (Performance-Vesting Option Awards) (incorporated by reference to Exhibit 10.6 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 22, 2014 (File No. 001-33664)).</u>
10.54+	<u>Form of Stock Option Agreement dated January 15, 2014 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 22, 2014 (File No. 001-33664)).</u>
10.55+	<u>Form of Restricted Stock Unit Agreement dated January 15, 2014 (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on January 22, 2014 (File No. 001-33664)).</u>
10.56+	<u>Form of Amendment to Nonqualified Stock Option Agreements Granted Under the Charter Communications, Inc. Amended and Restated 2009 Stock Incentive Plan, dated as of October 25, 2016 (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of Charter Communications, Inc. filed on October 28, 2016 (File No. 001-33664)).</u>
10.57+	<u>Form of Performance-Vesting Stock Option Agreement granted to certain executive officers in 2016 under the Charter Communications, Inc. Amended and Restated 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.102 to the Annual Report on Form 10-K of Charter Communications, Inc. filed on February 16, 2017 (File No. 001-33664)).</u>
10.58+	<u>Form of Performance-Vesting Restricted Stock Unit Agreement granted to certain executive officers in 2016 under the Charter Communications, Inc. Amended and Restated 2009 Stock Incentive Plan (incorporated by reference to Exhibit 10.103 to the Annual Report on Form 10-K of Charter Communications, Inc. filed on February 16, 2017 (File No. 001-33664)).</u>
10.59+	<u>Charter Communications, Inc. 2019 Stock Incentive Plan (incorporated by reference to Annex A to the proxy statement for the Charter Communications, Inc. 2019 Annual Meeting of Stockholders filed March 14, 2019 (File No. 001-33664)).</u>
10.60+	<u>Amendment to the Charter Communications, Inc. 2019 Stock Incentive Plan, dated as of January 28, 2020 (incorporated by reference to Exhibit 10.152 to the Annual Report on Form 10-K of Charter Communications, Inc. filed on January 31, 2020 (File No. 001-33664)).</u>
10.61+	<u>Form of Nonqualified Stock Option Agreement under the Charter Communications, Inc. 2019 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of Charter Communications, Inc. filed July 26, 2019 (File No. 001-33664)).</u>
10.62+	<u>Form of Restricted Stock Unit Agreement under the Charter Communications, Inc. 2019 Stock Incentive Plan (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q of Charter Communications, Inc. filed July 26, 2019 (File No. 001-33664)).</u>
10.63+	<u>Form of Restricted Stock Agreement under the Charter Communications, Inc. 2019 Stock Incentive Plan (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q of Charter Communications, Inc. filed July 26, 2019 (File No. 001-33664)).</u>
10.64+	<u>Time Warner Cable Inc. 2006 Stock Incentive Plan (incorporated herein by reference to Exhibit 10.45 to TWC's Current Report on Form 8-K dated February 13, 2007 and filed with the SEC on February 13, 2007).</u>
10.65+	<u>Time Warner Cable Inc. 2006 Stock Incentive Plan, as amended, effective March 12, 2009 (incorporated herein by reference to Exhibit 10.1 to TWC's Quarterly Report on Form 10-Q for the quarter ended March 31, 2009).</u>
10.66+	<u>Time Warner Cable Inc. 2011 Stock Incentive Plan (incorporated herein by reference to Annex A to TWC's definitive Proxy Statement dated April 6, 2011 and filed with the SEC on April 6, 2011).</u>
10.67+	<u>Amended and Restated Employment Agreement, dated as of September 20, 2022, by and between Charter Communications, Inc. and Thomas M. Rutledge (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2022 (File No. 001-33664)).</u>

10.68(a)+	<u>Employment Agreement, dated July 27, 2021, between Charter Communications, Inc. and David G. Ellen (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q filed by Charter Communications, Inc. on July 30, 2021 (File No. 001-33664)).</u>
10.68(b)+	<u>Amendment to Employment Agreement, dated as of October 27, 2022, by and between Charter Communications, Inc. and David G. Ellen (incorporated by reference to Exhibit 10.6 to the Quarterly Report on Form 10-Q filed by Charter Communications, Inc. on October 28, 2022 (File No. 001-33664)).</u>
10.69+	<u>Amended and Restated Employment Agreement, dated as of September 20, 2022, by and between Charter Communications, Inc. and Christopher L. Winfrey (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2022 (File No. 001-33664)).</u>
10.70+	<u>Employment Agreement, dated as of September 20, 2022, by and between Charter Communications, Inc. and Richard J. DiGeronimo (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed by Charter Communications, Inc. on September 21, 2022 (File No. 001-33664)).</u>
10.71(a)+	<u>Employment Agreement, dated as of February 5, 2021, by and between Charter Communications, Inc. and Jessica Fischer (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of Charter Communications, Inc. filed on October 19, 2021 (File No. 001-33664)).</u>
10.71(b)+*	<u>Employment Agreement, dated as of January 26, 2023, by and between Charter Communications, Inc. and Jessica Fischer.</u>
10.72(a)+*	<u>Employment Agreement, dated as of May 18, 2021, by and between Charter Communications, Inc. and Jonathan Hargis.</u>
10.72(b)+*	<u>Amendment to Employment Agreement, dated as of May 11, 2022, by and between Charter Communications, Inc. and Jonathan Hargis.</u>
10.73	<u>Letter Agreement, dated as of December 23, 2016, between Charter Communications, Inc. and Advance/Newhouse Partnership (incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on December 28, 2016 (File No. 001-33664)).</u>
10.74	<u>Amendment to Letter Agreement, dated as of December 21, 2017, between Charter Communications, Inc. and Advance/Newhouse Partnership (incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on December 22, 2017 (File No. 001-33664)).</u>
10.75	<u>Letter Agreement, dated as of February 23, 2021, between Charter Communications, Inc. and Liberty Broadband Corporation (incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K of Charter Communications, Inc. filed on February 24, 2021 (File No. 001-33664)).</u>
21.1*	<u>Subsidiaries of Charter Communications, Inc.</u>
23.1*	<u>Consent of KPMG LLP.</u>
31.1*	<u>Certificate of Chief Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Securities Exchange Act of 1934.</u>
31.2*	<u>Certificate of Chief Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Securities Exchange Act of 1934.</u>
32.1*	<u>Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Chief Executive Officer).</u>
32.2*	<u>Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Chief Financial Officer).</u>
101	The following financial information from Charter Communications, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2022, filed with the Securities and Exchange Commission on January 27, 2023, formatted in iXBRL (inline eXtensible Business Reporting Language) includes: (i) the Consolidated Balance Sheets; (ii) the Consolidated Statements of Operations; (iii) the Consolidated Statements of Changes in Shareholders' Equity; (iv) the Consolidated Statements of Cash Flows; and (vi) the Notes to the Consolidated Financial Statements.
104	Cover page, formatted in iXBRL and contained in Exhibit 101.

* Filed herewith

+ Management compensatory plan or arrangement

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Auditor Location: St. Louis, MO	
Auditor Firm ID: 185	
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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Charter Communications, Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Charter Communications, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, changes in shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Testing of residential and commercial revenue

As discussed in Note 12 to the consolidated financial statements, the Company recorded residential and commercial revenue of \$48.2 billion for the year ended December 31, 2022. This revenue is derived primarily from monthly subscription charges from its Internet, video, and voice services. Revenue is recognized as the services are provided to a customer on a monthly basis. The processing and recording of revenue are reliant upon multiple information technology (IT) systems.

We identified the evaluation of the sufficiency of audit evidence over residential and commercial revenue as a critical audit matter. Subjective auditor judgment was required in evaluating the sufficiency of audit evidence over residential and commercial revenue due to the volume of data and the number of accounting systems. Specifically, obtaining an understanding of the systems and processes used in the Company's recognition of residential and commercial revenue and evaluating the related internal controls required significant audit effort, including specialized skills and knowledge related to IT.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls over the Company's residential and commercial revenue processes. This included manual and automated controls over the IT systems used for the processing and recording of residential and commercial revenue. We involved IT professionals with specialized skills and knowledge, who assisted in testing certain IT applications that are used by the Company in its recognition of residential and commercial revenue. We assessed recorded residential and commercial revenue by comparing the cash received related to residential and commercial revenue transactions during the year to the revenue recorded in the consolidated financial statements. We evaluated the sufficiency of audit evidence obtained by assessing the results of procedures performed.

(signed) KPMG LLP

We have served as the Company's auditor since 2002.

St. Louis, Missouri
January 26, 2023

CHARTER COMMUNICATIONS, INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(dollars in millions, except share data)

	December 31,	
	2022	2021
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	\$ 645	\$ 601
Accounts receivable, less allowance for doubtful accounts of \$219 and \$157, respectively	2,921	2,579
Prepaid expenses and other current assets	451	386
Total current assets	4,017	3,566
INVESTMENT IN CABLE PROPERTIES:		
Property, plant and equipment, net of accumulated depreciation of \$36,164 and \$34,253, respectively	36,039	34,310
Customer relationships, net	2,772	4,060
Franchises	67,363	67,346
Goodwill	29,563	29,562
Total investment in cable properties, net	135,737	135,278
OTHER NONCURRENT ASSETS	4,769	3,647
Total assets	\$ 144,523	\$ 142,491
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable and accrued liabilities	\$ 10,555	\$ 9,461
Current portion of long-term debt	1,510	2,997
Total current liabilities	12,065	12,458
LONG-TERM DEBT	96,093	88,564
DEFERRED INCOME TAXES	19,058	19,096
OTHER LONG-TERM LIABILITIES	4,758	4,217
SHAREHOLDERS' EQUITY:		
Class A common stock; \$0.001 par value; 900 million shares authorized; 152,651,396 and 172,741,236 shares issued and outstanding, respectively	—	—
Class B common stock; \$0.001 par value; 1,000 shares authorized; 1 share issued and outstanding	—	—
Preferred stock; \$0.001 par value; 250 million shares authorized; no shares issued and outstanding	—	—
Additional paid-in capital	23,940	26,725
Accumulated deficit	(14,821)	(12,675)
Total Charter shareholders' equity	9,119	14,050
Noncontrolling interests	3,430	4,106
Total shareholders' equity	12,549	18,156
Total liabilities and shareholders' equity	\$ 144,523	\$ 142,491

The accompanying notes are an integral part of these consolidated financial statements.

CHARTER COMMUNICATIONS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(dollars in millions, except per share and share data)

	Year Ended December 31,		
	2022	2021	2020
REVENUES	\$ 54,022	\$ 51,682	\$ 48,097
COSTS AND EXPENSES:			
Operating costs and expenses (exclusive of items shown separately below)	32,876	31,482	29,930
Depreciation and amortization	8,903	9,345	9,704
Other operating expenses, net	281	329	58
	42,060	41,156	39,692
Income from operations	11,962	10,526	8,405
OTHER INCOME (EXPENSES):			
Interest expense, net	(4,556)	(4,037)	(3,848)
Other income (expenses), net	56	(101)	(255)
	(4,500)	(4,138)	(4,103)
Income before income taxes	7,462	6,388	4,302
Income tax expense	(1,613)	(1,068)	(626)
Consolidated net income	5,849	5,320	3,676
Less: Net income attributable to noncontrolling interests	(794)	(666)	(454)
Net income attributable to Charter shareholders	\$ 5,055	\$ 4,654	\$ 3,222
EARNINGS PER COMMON SHARE ATTRIBUTABLE TO CHARTER SHAREHOLDERS:			
Basic	\$ 31.30	\$ 25.34	\$ 15.85
Diluted	\$ 30.74	\$ 24.47	\$ 15.40
Weighted average common shares outstanding, basic	161,501,355	183,669,369	203,316,483
Weighted average common shares outstanding, diluted	164,433,596	193,042,948	209,273,247

The accompanying notes are an integral part of these consolidated financial statements.

CHARTER COMMUNICATIONS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(dollars in millions)

	Class A Common Stock	Class B Common Stock	Additional Paid-in Capital	Retained Earnings (Accumulated Deficit)	Total Charter Shareholders' Equity	Noncontrolling Interests	Total Shareholders' Equity
BALANCE, December 31, 2019	\$ —	\$ —	\$ 31,405	\$ 40	\$ 31,445	\$ 7,366	\$ 38,811
Consolidated net income	—	—	—	3,222	3,222	454	3,676
Stock compensation expense	—	—	351	—	351	—	351
Exercise of stock options	—	—	184	—	184	—	184
Issuance of equity	—	—	23	—	23	—	23
Purchases and retirement of treasury stock	—	—	(2,760)	(8,457)	(11,217)	—	(11,217)
Purchase of noncontrolling interest, net of tax	—	—	(606)	—	(606)	(656)	(1,262)
Change in noncontrolling interest ownership, net of tax	—	—	403	—	403	(534)	(131)
Distributions to noncontrolling interest	—	—	—	—	—	(154)	(154)
BALANCE, December 31, 2020	—	—	29,000	(5,195)	23,805	6,476	30,281
Consolidated net income	—	—	—	4,654	4,654	666	5,320
Stock compensation expense	—	—	430	—	430	—	430
Exercise of stock options	—	—	44	—	44	—	44
Purchases and retirement of treasury stock	—	—	(3,297)	(12,134)	(15,431)	—	(15,431)
Purchase of noncontrolling interest, net of tax	—	—	(1,077)	—	(1,077)	(808)	(1,885)
Preferred unit conversion and change in noncontrolling interest ownership, net of tax	—	—	1,625	—	1,625	(2,153)	(528)
Distributions to noncontrolling interest	—	—	—	—	—	(75)	(75)
BALANCE, December 31, 2021	—	—	26,725	(12,675)	14,050	4,106	18,156
Consolidated net income	—	—	—	5,055	5,055	794	5,849
Stock compensation expense	—	—	470	—	470	—	470
Exercise of stock options	—	—	5	—	5	—	5
Purchases and retirement of treasury stock	—	—	(3,076)	(7,201)	(10,277)	—	(10,277)
Purchase of noncontrolling interest, net of tax	—	—	(681)	—	(681)	(700)	(1,381)
Change in noncontrolling interest ownership, net of tax	—	—	497	—	497	(659)	(162)
Distributions to noncontrolling interest	—	—	—	—	—	(111)	(111)
BALANCE, December 31, 2022	\$ —	\$ —	\$ 23,940	\$ (14,821)	\$ 9,119	\$ 3,430	\$ 12,549

The accompanying notes are an integral part of these consolidated financial statements.

CHARTER COMMUNICATIONS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(dollars in millions)

	Year Ended December 31,		
	2022	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES:			
Consolidated net income	\$ 5,849	\$ 5,320	\$ 3,676
Adjustments to reconcile consolidated net income to net cash flows from operating activities:			
Depreciation and amortization	8,903	9,345	9,704
Stock compensation expense	470	430	351
Noncash interest income, net	(17)	(23)	(41)
Deferred income taxes	87	826	465
Other, net	29	181	214
Changes in operating assets and liabilities, net of effects from acquisitions and dispositions:			
Accounts receivable	(342)	(35)	(67)
Prepaid expenses and other assets	(202)	(167)	(31)
Accounts payable, accrued liabilities and other	148	362	291
Net cash flows from operating activities	14,925	16,239	14,562
CASH FLOWS FROM INVESTING ACTIVITIES:			
Purchases of property, plant and equipment	(9,376)	(7,635)	(7,415)
Change in accrued expenses related to capital expenditures	553	80	(77)
Purchases of wireless spectrum licenses	—	—	(464)
Other, net	(291)	(199)	(201)
Net cash flows from investing activities	(9,114)	(7,754)	(8,157)
CASH FLOWS FROM FINANCING ACTIVITIES:			
Borrowings of long-term debt	25,643	20,976	15,754
Repayments of long-term debt	(19,311)	(12,146)	(12,094)
Payments for debt issuance costs	(71)	(102)	(125)
Issuance of equity	—	—	23
Purchase of treasury stock	(10,277)	(15,431)	(11,217)
Proceeds from exercise of stock options	5	44	184
Purchase of noncontrolling interest	(1,602)	(2,234)	(1,462)
Distributions to noncontrolling interest	(111)	(75)	(154)
Other, net	(43)	83	138
Net cash flows from financing activities	(5,767)	(8,885)	(8,953)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	44	(400)	(2,548)
CASH AND CASH EQUIVALENTS, beginning of period	601	1,001	3,549
CASH AND CASH EQUIVALENTS, end of period	\$ 645	\$ 601	\$ 1,001
CASH PAID FOR INTEREST	\$ 4,509	\$ 4,043	\$ 3,866
CASH PAID FOR TAXES	\$ 1,321	\$ 157	\$ 123

The accompanying notes are an integral part of these consolidated financial statements.

CHARTER COMMUNICATIONS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
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1. Organization and Basis of Presentation

Organization

Charter Communications, Inc. (together with its controlled subsidiaries, “Charter,” or the “Company”) is a leading broadband connectivity company and cable operator. Over an advanced high-capacity, two-way telecommunications network, the Company offers a full range of state-of-the-art residential and business services including Spectrum Internet®, TV, Mobile and Voice. For small and medium-sized companies, Spectrum Business® delivers the same suite of broadband products and services coupled with special features and applications to enhance productivity, while for larger businesses and government entities, Spectrum Enterprise™ provides highly customized, fiber-based solutions. Spectrum Reach® delivers tailored advertising and production for the modern media landscape. The Company also distributes award-winning news coverage and sports programming to its customers through SpectrumNetworks.

Charter is a holding company whose principal asset is a controlling equity interest in Charter Communications Holdings, LLC (“Charter Holdings”), an indirect owner of Charter Communications Operating, LLC (“Charter Operating”) under which substantially all of the operations reside.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (“GAAP”) and the rules and regulations of the Securities and Exchange Commission (the “SEC”).

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Areas involving significant judgments and estimates include capitalization of labor and overhead costs, pension benefits and income taxes. Actual results could differ from those estimates. Certain prior period amounts have been reclassified to conform with the 2022 presentation.

Comprehensive income equaled net income attributable to Charter shareholders for the years ended December 31, 2022, 2021 and 2020.

2. Summary of Significant Accounting Policies

Information on other accounting policies and methods that the Company uses in the preparation of its consolidated financial statements are included, where applicable, in their respective footnotes. Below is a discussion of accounting policies and methods used in the Company's consolidated financial statements that are not presented within other footnotes.

Consolidation

The accompanying consolidated financial statements include the accounts of Charter and all entities in which Charter has a controlling interest, including variable interest entities (“VIEs”) where Charter is the primary beneficiary. The Company consolidates based upon evaluation of the Company's power, through voting rights or similar rights, to direct the activities of another entity that most significantly impact the entity's economic performance; its obligation to absorb the expected losses of the entity; and its right to receive the expected residual returns of the entity. Charter controls and consolidates Charter Holdings. The noncontrolling interest on the Company's balance sheet primarily represents Advance/Newhouse Partnership's (“A/N”) minority equity interests in Charter Holdings. See Note 10. All significant intercompany accounts and transactions among consolidated entities have been eliminated in consolidation.

Cash and Cash Equivalents

The Company considers all highly liquid investments with original maturities of three months or less to be cash equivalents. These investments are carried at cost, which approximates market value.

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Valuation of Long-Lived Assets

The Company evaluates the recoverability of long-lived assets (e.g., property, plant and equipment and finite-lived intangible assets) to be held and used when events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Such events or changes in circumstances could include such factors as impairment of the Company's indefinite life assets, changes in technological advances, fluctuations in the fair value of such assets, adverse changes in relationships with local franchise authorities, adverse changes in market conditions or a deterioration of current or expected future operating results. If a review indicates that the carrying value of such asset is not recoverable from estimated undiscounted cash flows, the carrying value of such asset is reduced to its estimated fair value. While the Company believes that its estimates of future cash flows are reasonable, different assumptions regarding such cash flows could materially affect its evaluations of asset recoverability. No impairments of long-lived assets held for use were recorded in 2022, 2021 and 2020. For non-strategic long-lived assets held for sale, the Company recorded impairments of approximately \$36 million during the year ended December 31, 2021 to other operating expenses, net (see Note 14).

Fair Value Measurements

Accounting guidance establishes a three-level hierarchy for disclosure of fair value measurements, based on the transparency of inputs to the valuation of an asset or liability as of the measurement date, as follows:

- Level 1 – inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2 – inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- Level 3 – inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The Company estimates the fair value of its financial instruments using available market information or other appropriate valuation methodologies. Considerable judgment, however, is required in interpreting market data to develop the estimates of fair value. Accordingly, the estimates presented in the accompanying consolidated financial statements are not necessarily indicative of the amounts the Company would realize in a current market exchange.

The Company's nonfinancial assets such as equity-method investments, franchises, property, plant, and equipment, and other intangible assets are not measured at fair value on a recurring basis; however, they are subject to fair value adjustments in certain circumstances, such as when there is evidence that an impairment may exist. When such impairments are recorded, fair values are generally classified within Level 3 of the valuation hierarchy.

The carrying amounts of cash and cash equivalents, receivables, payables and other current assets and liabilities approximate fair value because of the short maturity of those instruments.

Government Assistance

The Company's government assistance during the year ending December 31, 2022 primarily consists of federal subsidies from the Rural Development Opportunity Fund ("RDOF") and state broadband grants primarily funded by the American Rescue Plan Act of 2021 ("ARPA"). The Company was a winning bidder in phase I of the RDOF auction of approximately \$1.2 billion in federal subsidies to be received monthly over ten years to deploy and operate broadband services to unserved communities to more than one million estimated passings. For accounting purposes, RDOF subsidies are recorded as other revenue since the primary conditions for the receipt of the subsidies are the build out and operation of the broadband network over the ten years. During the year ended December 31, 2022, other revenues included approximately \$107 million of RDOF subsidy revenue. The Company has also been awarded broadband grants to construct broadband infrastructure to unserved and underserved communities by various state and local governments. For accounting purposes state broadband grants are recorded as a reduction to property, plant and equipment, since the primary conditions for these grants are to build out the broadband network. During the year ended December 31, 2022, the amount of state broadband grants recorded in the consolidated financial statements was not material.

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Advertising Costs

Advertising costs associated with marketing the Company's products and services are generally expensed as costs are incurred.

Segments

The Company's operations are managed and reported to its Chief Executive Officer ("CEO"), the Company's chief operating decision maker, on a consolidated basis. The CEO assesses performance and allocates resources based on the consolidated results of operations. Under this organizational and reporting structure, the Company has one reportable segment.

3. Property, Plant and Equipment

Additions to property, plant and equipment are recorded at cost, including all material, labor and certain indirect costs associated with the construction of cable transmission and distribution facilities. While the Company's capitalization is based on specific activities, once capitalized, costs are tracked on a composite basis by fixed asset category at the cable system level and not on a specific asset basis. For assets that are sold or retired, the estimated historical cost and related accumulated depreciation is removed. Costs associated with the placement of the customer drop to the dwelling and the placement of outlets within a dwelling along with the costs associated with the deployment of new customer premise equipment necessary to provide video, Internet or voice services are capitalized. Costs capitalized include materials, direct labor and overhead costs. The Company capitalizes direct labor and overhead using standards developed from actual costs and applicable operational data. The Company calculates standards annually (or more frequently if circumstances dictate) for items such as the labor rates, overhead rates, and the actual amount of time required to perform a capitalizable activity. Overhead costs are associated with the activities of the Company's personnel and consist of compensation and other indirect costs associated with support functions. Indirect costs primarily include employee benefits and payroll taxes, and vehicle and occupancy costs. The costs of disconnecting service and removing customer premise equipment from a dwelling and the costs to reconnect a customer drop or to redeploy previously installed customer premise equipment are charged to operating expense as incurred. Costs for repairs and maintenance are charged to operating expense as incurred, while plant and equipment replacement, including replacement of certain components, betterments, including replacement of cable drops and outlets, are capitalized.

Depreciation is recorded using the straight-line composite method over management's estimate of the useful lives of the related assets as follows:

Cable distribution systems	6-22 years
Customer premise equipment and installations	3-8 years
Vehicles and equipment	6-21 years
Buildings and improvements	8-40 years
Furniture, fixtures and equipment	2-10 years

The Company periodically evaluates the estimated useful lives used to depreciate its assets and the estimated amount of assets that will be abandoned or have minimal use in the future. A significant change in assumptions about the extent or timing of future asset retirements, or in the Company's use of new technology and upgrade programs, could materially affect future depreciation expense. Depreciation expense for the years ended December 31, 2022, 2021 and 2020 was \$7.6 billion, \$7.7 billion, and \$7.8 billion, respectively.

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Property, plant and equipment consists of the following as of December 31, 2022 and 2021:

	December 31,	
	2022	2021
Cable distribution systems	\$ 38,606	\$ 35,907
Customer premise equipment and installations	18,196	17,893
Vehicles and equipment	2,068	2,019
Buildings and improvements	5,833	5,729
Furniture, fixtures and equipment	7,500	7,015
	72,203	68,563
Less: accumulated depreciation	(36,164)	(34,253)
	<u>\$ 36,039</u>	<u>\$ 34,310</u>

Certain of the Company's franchise agreements and leases contain provisions requiring the Company to restore facilities or remove equipment in the event that the franchise or lease agreement is not renewed. The Company expects to continually renew its franchise agreements and therefore cannot reasonably estimate any liabilities associated with such agreements. A remote possibility exists that franchise agreements could be terminated unexpectedly, which could result in the Company incurring significant expense in complying with restoration or removal provisions. The Company does not have any significant liabilities related to asset retirements recorded in its consolidated financial statements.

4. Franchises, Goodwill and Other Intangible Assets

Franchise rights represent the value attributed to agreements or authorizations with local and state authorities that allow access to homes in cable service areas. For valuation purposes, they are defined as the future economic benefits of the right to solicit and service potential customers (customer marketing rights), and the right to deploy and market new services to potential customers (service marketing rights).

Management estimates the fair value of franchise rights at the date of acquisition and determines if the franchise has a finite life or an indefinite life. The Company has concluded that all of its franchises qualify for indefinite life treatment given that there are no legal, regulatory, contractual, competitive, economic or other factors which limit the period over which these rights will contribute to the Company's cash flows. The Company reassesses this determination periodically or whenever events or substantive changes in circumstances occur.

All franchises are tested for impairment annually or more frequently as warranted by events or changes in circumstances. Franchise assets are aggregated into essentially inseparable units of accounting to conduct valuations. The franchise units of accounting are geographical clustering of cable systems representing the highest and best use groupings if sold to market participants. The Company assesses qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that an indefinite lived intangible asset has been impaired. If, after this optional qualitative assessment, the Company determines that it is not more likely than not that an indefinite lived intangible asset has been impaired, then no further quantitative testing is necessary. In completing the qualitative impairment testing, the Company evaluates a multitude of factors that affect the fair value of its franchise assets. Examples of such factors include environmental and competitive changes within the Company's operating footprint, actual and projected operating performance, the consistency of its operating margins, equity and debt market trends, including changes in its market capitalization, and changes in its regulatory and political landscape, among other factors. The Company performed a qualitative assessment in 2022. After consideration of the qualitative factors in 2022, the Company concluded that it is more likely than not that the fair value of the franchise assets in each unit of accounting exceeds the carrying value of such assets and therefore did not perform a quantitative analysis at the assessment date. Periodically, the Company may elect to perform a quantitative analysis for impairment testing. If the Company elects or is required to perform a quantitative analysis to test its franchise assets for impairment, the estimated fair value of franchises is determined utilizing an income approach model based on the present value of the estimated discrete future cash flows attributable to each of the intangible assets identified assuming a discount rate.

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The Company has determined that it has one reporting unit for purposes of the assessment of goodwill impairment. Goodwill is tested for impairment as of November 30 of each year, or more frequently as warranted by events or changes in circumstances. Accounting guidance also permits an optional qualitative assessment for goodwill to determine whether it is more likely than not that the carrying value of a reporting unit exceeds its fair value. If, after this qualitative assessment, the Company determines that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount then no further quantitative testing would be necessary. A quantitative assessment is performed if the qualitative assessment results in a more likely than not determination or if a qualitative assessment is not performed. The quantitative assessment considers whether the carrying amount of a reporting unit exceeds its fair value, in which case an impairment charge is recorded to the extent the reporting unit's carrying value exceeds its fair value. As with the Company's franchise impairment testing, in 2022 the Company elected to perform a qualitative goodwill impairment assessment, which incorporated consideration of the same qualitative factors relevant to the Company's franchise impairment testing. As a result of that assessment, the Company concluded that goodwill is not impaired.

Customer relationships are recorded at fair value as of the date acquired less accumulated amortization. Customer relationships are amortized on an accelerated sum of years' digits method over useful lives of 8-15 years based on the period over which current customers are expected to generate cash flows. The Company periodically evaluates the remaining useful lives of its customer relationships to determine whether events or circumstances warrant revision to the remaining periods of amortization. Customer relationships are evaluated for impairment upon the occurrence of events or changes in circumstances indicating that the carrying amount of an asset may not be recoverable. Customer relationships are deemed impaired when the carrying value exceeds the projected undiscounted future cash flows associated with the customer relationships. No impairment of customer relationships was recorded in the years ended December 31, 2022, 2021 or 2020.

The Company owns approximately \$464 million of Citizens Broadband Radio Service ("CBRS") priority access licenses. The wireless spectrum licenses are considered indefinite life intangible assets recorded in other noncurrent assets on the Company's consolidated balance sheets and payments (including deposits) are presented as an investing cash outflow on the Company's statements of cash flows. The Company elected to perform a qualitative impairment assessment in 2022 and concluded that its CBRS priority access licenses are not impaired.

As of December 31, 2022 and 2021, indefinite-lived and finite-lived intangible assets are presented in the following table:

	December 31,					
	2022			2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Indefinite-lived intangible assets:						
Franchises	\$ 67,363	\$ —	\$ 67,363	\$ 67,346	\$ —	\$ 67,346
Goodwill	29,563	—	29,563	29,562	—	29,562
Wireless spectrum licenses	464	—	464	464	—	464
Trademarks	159	—	159	159	—	159
	<u>\$ 97,549</u>	<u>\$ —</u>	<u>\$ 97,549</u>	<u>\$ 97,531</u>	<u>\$ —</u>	<u>\$ 97,531</u>
Finite-lived intangible assets:						
Customer relationships	\$ 18,250	\$ (15,478)	\$ 2,772	\$ 18,240	\$ (14,180)	\$ 4,060
Other intangible assets	440	(236)	204	430	(196)	234
	<u>\$ 18,690</u>	<u>\$ (15,714)</u>	<u>\$ 2,976</u>	<u>\$ 18,670</u>	<u>\$ (14,376)</u>	<u>\$ 4,294</u>

Amortization expense related to customer relationships and other intangible assets for the years ended December 31, 2022, 2021 and 2020 was \$1.3 billion, \$1.6 billion and \$1.9 billion, respectively.

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The Company expects amortization expense on its finite-lived intangible assets will be as follows.

2023	\$ 1,083
2024	831
2025	582
2026	324
2027	96
Thereafter	60
	<u>\$ 2,976</u>

Actual amortization expense in future periods could differ from these estimates as a result of new intangible asset acquisitions or divestitures, changes in useful lives, impairments, adoption of new accounting standards and other relevant factors.

5. Investments

Investments are accounted for under the equity method of accounting or as equity securities, all of which are recorded in other noncurrent assets in the consolidated balance sheets as of December 31, 2022 and 2021. The Company accounts for its investments in less than majority owned investees under either the equity method or as equity securities. The Company applies the equity method to investments when it has the ability to exercise significant influence over the operating and financial policies of the investee. The Company's share of the investee's earnings (losses) is included in other expense, net in the consolidated statements of operations. The Company monitors its investments for indicators that a decrease in investment value has occurred that is other than temporary. If it has been determined that an investment has sustained an other-than-temporary decline in value, the investment is written down to fair value with a charge to earnings. Investments acquired are measured at fair value utilizing the acquisition method of accounting. The difference between the fair value and the amount of underlying equity in net assets for most equity method investments is due to unrecognized intangible assets at the investee. These amounts are amortized as a component of equity earnings (losses), recorded within other expense, net over the estimated useful life of the asset.

Investments consisted of the following as of December 31, 2022 and 2021:

	December 31,	
	2022	2021
Equity-method investments	\$ 991	\$ 112
Other investments	164	91
Total investments	<u>\$ 1,155</u>	<u>\$ 203</u>

In June 2022, the Company and Comcast Corporation ("Comcast") entered into a 50/50 joint venture to develop and offer a next-generation streaming platform on a variety of streaming devices and smart TVs. Comcast licensed its streaming platform and hardware to the joint venture and contributed the retail business for XClass TVs and Xumo, a streaming service it acquired in 2020. The Company's investment is approximately \$981 million with \$271 million paid in 2022 and with the remaining non-cancelable required contributions to be paid over multiple years and recorded as liabilities as of December 31, 2022. The Company accounts for the investment as an equity method investment and records investment income (loss) on its share of the joint venture income (loss).

The Company's equity-method investments balances reflected in the table above includes differences between the acquisition date fair value of certain investments acquired and the underlying equity in the net assets of the investee, referred to as a basis difference. This basis difference is amortized as a component of equity earnings. The remaining unamortized basis difference was \$432 million and \$40 million as of December 31, 2022 and 2021, respectively.

For the years ended December 31, 2022, 2021 and 2020, net losses from investments were \$100 million, \$176 million and \$31 million, respectively, which were recorded in other income (expenses), net in the consolidated statements of operations.

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6. Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities consist of the following as of December 31, 2022 and 2021:

	December 31,	
	2022	2021
Accounts payable – trade	\$ 952	\$ 724
Deferred revenue	511	461
Accrued liabilities:		
Programming costs	1,914	2,036
Labor	1,314	1,304
Capital expenditures	1,792	1,281
Interest	1,165	1,099
Taxes and regulatory fees	667	592
Property and casualty	505	490
Operating lease liabilities	295	269
Other	1,440	1,205
	<u>\$ 10,555</u>	<u>\$ 9,461</u>

7. Leases

The primary leased asset classes of the Company include real estate, dark fiber, colocation facilities and other equipment. The lease agreements include both lease and non-lease components, which the Company accounts for separately depending on the election made for each leased asset class. For real estate and dark fiber leased asset classes, the Company accounts for lease and non-lease components as a single lease component and includes all fixed payments in the measurement of lease liabilities and lease assets. For colocation facilities leased asset class, the Company accounts for lease and non-lease components separately including only the fixed lease payment component in the measurement of lease liabilities and lease assets.

Lease assets and lease liabilities are initially recognized based on the present value of the future lease payments over the expected lease term. As for most leases the implicit rate is not readily determinable, the Company uses a discount rate in determining the present value of future payments based on the yield-to-maturity of the Company's secured publicly traded United States dollars denominated debt instruments interpolating the duration of the debt to the term of the executed lease.

The Company's leases have base rent periods and some with optional renewal periods. Leases with base rent periods of less than 12 months are not recorded on the balance sheet. For purposes of measurement of lease liabilities, the expected lease terms may include renewal options when it is reasonably certain that the Company will exercise such options.

Operating lease expenses were \$482 million, \$463 million and \$439 million for the years ended December 31, 2022, 2021 and 2020, respectively, inclusive of both short-term lease costs and variable lease costs that were not included in the measurement of operating lease liabilities.

Cash paid for amounts included in the measurement of operating lease liabilities, recorded as operating cash flows in the statements of cash flows, were \$345 million, \$327 million and \$300 million for the years ended December 31, 2022, 2021 and 2020, respectively. Operating lease right-of-use assets obtained in exchange for operating lease obligations were \$221 million, \$368 million and \$378 million for the years ended December 31, 2022, 2021 and 2020, respectively.

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Supplemental balance sheet information related to leases is as follows.

	December 31,	
	2022	2021
Operating lease right-of-use assets:		
Included within other noncurrent assets	\$ 1,235	\$ 1,306
Operating lease liabilities:		
Current portion included within accounts payable and accrued liabilities	\$ 295	\$ 269
Long-term portion included within other long-term liabilities	1,083	1,182
	<u>\$ 1,378</u>	<u>\$ 1,451</u>
Weighted average remaining lease term for operating leases	5.6 years	5.9 years
Weighted average discount rate for operating leases	3.7 %	3.4 %

Maturities of operating lease liabilities as of December 31, 2022 are as follows.

2023	\$ 365
2024	324
2025	266
2026	191
2027	149
Thereafter	290
Undiscounted lease cash flow commitments	1,585
Reconciling impact from discounting	(207)
Lease liabilities on consolidated balance sheet as of December 31, 2022	<u>\$ 1,378</u>

8. Long-Term Debt

A summary of our debt as of December 31, 2022 and 2021 is as follows:

	December 31, 2022				December 31, 2021			
	Principal Amount	Carrying Value	Fair Value	Weighted Average Interest Rate	Principal Amount	Carrying Value	Fair Value	Weighted Average Interest Rate
Senior unsecured notes	\$ 26,650	\$ 26,567	\$ 22,426	4.8 %	\$ 23,950	\$ 23,882	\$ 24,630	4.7 %
Senior secured notes and debentures ^(a)	56,841	57,213	46,905	5.1 %	56,525	57,011	64,346	5.0 %
Credit facilities ^(b)	13,877	13,823	13,467	5.9 %	10,723	10,668	10,665	1.6 %
Total debt	<u>\$ 97,368</u>	<u>\$ 97,603</u>	<u>\$ 82,798</u>	5.1 %	<u>\$ 91,198</u>	<u>\$ 91,561</u>	<u>\$ 99,641</u>	4.5 %

^(a) Includes the Company's £625 million aggregate principal amount of fixed-rate British pound sterling denominated notes (the "Sterling Notes") (remeasured at \$755 million and \$846 million as of December 31, 2022 and 2021, respectively, using the exchange rate at the respective dates) and the Company's £650 million aggregate principal amount of Sterling Notes (remeasured at \$786 million and \$879 million as of December 31, 2022 and 2021, respectively, using the exchange rate at the respective dates).

^(b) The Company has availability under the Charter Operating credit facilities of approximately \$4.0 billion as of December 31, 2022.

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The estimated fair value of the Company's senior unsecured and secured notes and debentures as of December 31, 2022 and 2021 is based on quoted market prices in active markets and is classified within Level 1 of the valuation hierarchy, while the estimated fair value of the Company's credit facilities is based on quoted market prices in inactive markets and is classified within Level 2.

In 2022, CCO Holdings, LLC ("CCO Holdings") and CCO Holdings Capital Corp. jointly issued \$2.7 billion aggregate principal amount of senior unsecured notes and Charter Operating and Charter Communications Operating Capital Corp. jointly issued \$3.5 billion aggregate principal amount of senior secured notes. The notes were issued at varying rates, prices and maturity dates and the net proceeds were used to pay related fees and expenses and for general corporate purposes, including funding buybacks of Charter Class A common stock and Charter Holdings common units as well as repaying certain indebtedness.

During the years ended December 31, 2022, 2021 and 2020, the Company repurchased \$3.0 billion, \$5.1 billion and \$10.7 billion, respectively, of various series of senior notes. Losses on extinguishment of debt are recorded in other income (expenses), net in the consolidated statements of operations and consisted of the following.

	Year Ended December 31,		
	2022	2021	2020
CCO Holdings notes redemption	\$ —	\$ (146)	\$ (145)
Time Warner Cable, LLC notes redemption	—	2	2
Charter Operating notes redemption	(1)	—	—
Charter Operating credit facility refinancing	(2)	—	—
Loss on extinguishment of debt	<u>\$ (3)</u>	<u>\$ (144)</u>	<u>\$ (143)</u>

CCO Holdings Notes

The CCO Holdings notes are senior debt obligations of CCO Holdings and CCO Holdings Capital Corp. and rank equally with all other current and future unsecured, unsubordinated obligations of CCO Holdings and CCO Holdings Capital Corp. They are structurally subordinated to all obligations of subsidiaries of CCO Holdings.

CCO Holdings may redeem some or all of the CCO Holdings notes at any time at a premium. The optional redemption price declines to 100% of the respective series' principal amount, plus accrued and unpaid interest, if any, on or after varying dates in 2023 through 2031.

In addition, at any time prior to varying dates in 2023 through 2025, CCO Holdings may redeem up to 40% of the aggregate principal amount of certain notes at a premium plus accrued and unpaid interest to the redemption date, with the net cash proceeds of one or more equity offerings (as defined in the indenture); provided that certain conditions are met. In the event of specified change of control events, CCO Holdings must offer to purchase the outstanding CCO Holdings notes from the holders at a purchase price equal to 101% of the total principal amount of the notes, plus any accrued and unpaid interest.

The indentures governing the CCO Holdings notes contain certain covenants that restrict the ability of CCO Holdings, CCO Holdings Capital Corp. and all of their restricted subsidiaries to:

- incur additional debt;
- pay dividends on equity or repurchase equity;
- make investments;
- sell all or substantially all of their assets or merge with or into other companies;
- sell assets;
- in the case of restricted subsidiaries, create or permit to exist dividend or payment restrictions with respect to CCO Holdings, guarantee their parent companies debt, or issue specified equity interests;
- engage in certain transactions with affiliates; and
- grant liens (with respect to only CCO Holdings).

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The above limitations in certain circumstances regarding incurrence of debt, payment of dividends and making investments contained in the indentures of CCO Holdings permit CCO Holdings and its restricted subsidiaries to perform the above, so long as, after giving pro forma effect to the above, the leverage ratio would be below a specified level for the issuer. The maximum total leverage ratio under the indentures is 6.0 to 1.0. The leverage ratio was 4.2 as of December 31, 2022.

Charter Operating Notes

The Charter Operating notes are guaranteed by CCO Holdings and substantially all of the subsidiaries of Charter Operating. In addition, the Charter Operating notes are secured by a perfected first priority security interest in substantially all of the assets of Charter Operating and substantially all of its subsidiaries to the extent such liens can be perfected under the Uniform Commercial Code by the filing of a financing statement and the liens rank equally with the liens on the collateral securing obligations under the Charter Operating credit facilities. Charter Operating may redeem some or all of the Charter Operating notes at any time at a premium.

The Charter Operating notes are subject to the terms and conditions of the indentures governing the Charter Operating notes. The Charter Operating notes indentures contain customary representations and warranties and affirmative covenants with customary negative covenants, including restrictions on the ability of Charter Operating or any of its material subsidiaries to incur liens securing indebtedness for borrowed money and on the ability of Charter Operating to consolidate, merge or convey or transfer substantially all of their assets. The Charter Operating indentures also contain customary events of default.

Charter Operating Credit Facilities

In May 2022, Charter Operating entered into an amendment to its credit agreement. The Charter Operating credit facilities have an outstanding principal amount of \$13.9 billion at December 31, 2022 as follows:

- term loan A-5 with a remaining principal amount of approximately \$5.9 billion, which is repayable in quarterly installments and aggregating \$303 million in each loan year, with the remaining balance due at final maturity on August 31, 2027. Pricing on term loan A-5 is Secured Overnight Financing Rate ("SOFR") plus 1.25%;
- term loan A-6 with a remaining principal amount of approximately \$487 million, which is repayable in quarterly installments and aggregating \$25 million in each loan year, with the remaining balance due at final maturity on August 31, 2028. Pricing on term loan A-6 is SOFR plus 1.50%;
- term loan B-1 with a remaining principal amount of approximately \$2.3 billion, which is repayable in equal quarterly installments and aggregating \$25 million in each loan year, with the remaining balance due at final maturity on April 30, 2025. Pricing on term loan B-1 is LIBOR plus 1.75%;
- term loan B-2 with a remaining principal amount of approximately \$3.7 billion, which is repayable in equal quarterly installments and aggregating \$38 million in each loan year, with the remaining balance due at final maturity on February 1, 2027. Pricing on term loan B-2 is LIBOR plus 1.75%; and
- a revolving loan with an outstanding balance of \$1.5 billion and allowing for borrowings of up to \$5.5 billion maturing on August 31, 2027. Pricing on the revolving loan is SOFR plus 1.25% with a commitment fee based on Charter's corporate family rating and not to exceed 0.20%. As of December 31, 2022, \$37 million of the revolving loan was utilized to collateralize a like principal amount of letters of credit out of \$484 million of letters of credit issued on the Company's behalf.

Amounts outstanding under the Charter Operating credit facilities bear interest, at Charter Operating's election, at a base rate, SOFR or LIBOR, as defined, plus an applicable margin. SOFR and LIBOR were both 4.4% as of December 31, 2022 and as of December 31, 2021, LIBOR was 0.10%.

The Charter Operating credit facilities also allow us to enter into incremental term loans in the future, with amortization as set forth in the notices establishing such term loans. Although the Charter Operating credit facilities allow for the incurrence of a certain amount of incremental term loans subject to pro forma compliance with its financial maintenance covenants, no assurance can be given that the Company could obtain additional incremental term loans in the future if Charter Operating sought to do so or what amount of incremental term loans would be allowable at any given time under the terms of the Charter Operating credit facilities.

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The obligations of Charter Operating under the Charter Operating credit facilities are guaranteed by CCO Holdings and substantially all of the subsidiaries of Charter Operating. The obligations are also secured by (i) a lien on substantially all of the assets of Charter Operating and substantially all of its subsidiaries, to the extent such lien can be perfected under the Uniform Commercial Code by the filing of a financing statement, and (ii) a pledge of the equity interests directly or indirectly owned by Charter Operating in substantially all of its subsidiaries, as well as intercompany obligations owing to it and the guarantor subsidiaries by any of their affiliates.

The Charter Operating credit facilities contain representations and warranties, and customary affirmative and negative covenants, including restrictions on the ability of Charter Operating or any of its subsidiaries to incur liens securing indebtedness for borrowed money and on the ability of Charter Operating to consolidate, merge or convey or transfer substantially all of its assets. The financial covenants measure performance against standards set for leverage to be tested as of the end of each quarter. The Charter Operating credit facilities also contain customary events of default and the right to cure with respect to any defaults or events of default.

Time Warner Cable, LLC Notes and Debentures

The Time Warner Cable, LLC ("TWC, LLC") senior notes and debentures are guaranteed by CCO Holdings, Charter Operating and substantially all of the subsidiaries of Charter Operating (other than TWC, LLC) and rank equally with the liens on the collateral securing obligations under the Charter Operating notes and credit facilities. Interest on each series of TWC, LLC senior notes and debentures is payable semi-annually (with the exception of the Sterling Notes, which is payable annually) in arrears.

The TWC, LLC indentures contain customary covenants relating to restrictions on the ability of TWC, LLC or any of its material subsidiaries to incur liens securing indebtedness for borrowed money and on the ability of TWC, LLC and Time Warner Cable Enterprises LLC ("TWCE") to consolidate, merge or convey or transfer substantially all of their assets. The TWC, LLC indentures also contain customary events of default.

The TWC, LLC senior notes and debentures may be redeemed in whole or in part at any time at TWC, LLC's option at a redemption price equal to the greater of (i) all of the applicable principal amount being redeemed and (ii) the sum of the present values of the remaining scheduled payments on the applicable TWC, LLC senior notes and debentures discounted to the redemption date on a semi-annual basis (with the exception of the Sterling Notes, which are on an annual basis), at a comparable government bond rate plus a designated number of basis points as further described in the indenture and the applicable note or debenture, plus, in each case, accrued but unpaid interest to, but not including, the redemption date.

The Company may offer to redeem all, but not less than all, of the Sterling Notes in the event of certain changes in the tax laws of the U.S. (or any taxing authority in the U.S.). This redemption would be at a redemption price equal to 100% of the principal amount, together with accrued and unpaid interest on the Sterling Notes to, but not including, the redemption date.

TWCE Debentures

The TWCE senior debentures are guaranteed by CCO Holdings, Charter Operating, and substantially all of the subsidiaries of Charter Operating (other than TWCE) and rank equally with the liens on the collateral securing obligations under the Charter Operating notes and credit facilities. Interest on each series of TWCE senior debentures is payable semi-annually in arrears. The TWCE senior debentures are not redeemable before maturity.

The TWCE indentures contain customary covenants relating to restrictions on the ability of TWC, TWCE or any of its subsidiaries to incur liens securing indebtedness for borrowed money and on the ability of TWC, LLC and TWCE to consolidate, merge or convey or transfer substantially all of their assets. The TWCE indentures also contain customary events of default.

Limitations on Distributions

Distributions by the Company's subsidiaries to a parent company for payment of principal on parent company notes are restricted under the CCO Holdings indentures discussed above, unless there is no default under the applicable indenture, and unless CCO Holdings' leverage ratio test is met at the time of such distribution. As of December 31, 2022, there was no default

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under any of these indentures and CCO Holdings met its applicable leverage ratio tests based on December 31, 2022 financial results. There can be no assurance that CCO Holdings will satisfy these tests at the time of the contemplated distribution.

In addition to the limitation on distributions under the various indentures, distributions by the Company's subsidiaries may be limited by applicable law, including the Delaware Limited Liability Company Act, under which the Company's subsidiaries may make distributions if they have "surplus" as defined in the act.

Liquidity and Future Principal and Interest Payments

The Company continues to have significant amounts of debt, and its business requires significant cash to fund principal and interest payments on its debt, capital expenditures and ongoing operations. As set forth below, the Company has significant future principal and interest payments. The Company continues to monitor the capital markets, and it expects to undertake refinancing transactions and utilize free cash flow and cash on hand to further extend or reduce the maturities of its principal obligations. The timing and terms of any refinancing transactions will be subject to market conditions.

Interest payments on variable debt are estimated using amounts outstanding at December 31, 2022 and the average implied forward LIBOR or SOFR rates applicable for the quarter during the interest rate reset based on the yield curve in effect at December 31, 2022. Actual interest payments will differ based on actual LIBOR and SOFR rates and actual amounts outstanding for applicable periods. Based upon outstanding indebtedness as of December 31, 2022, the amortization of term loans, and the maturity dates for all senior and subordinated notes, total future principal and interest payments on the total borrowings under all debt agreements are as follows.

	Principal	Interest
2023	\$ 1,890	\$ 5,021
2024	2,390	4,764
2025	7,161	4,536
2026	1,116	4,234
2027	12,957	3,858
Thereafter	71,854	43,940
	<u>\$ 97,368</u>	<u>\$ 66,353</u>

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9. Common Stock

Charter's Class A common stock and Class B common stock are identical except with respect to certain voting, transfer and conversion rights. Holders of Class A common stock are entitled to one vote per share. Charter's Class B common stock represents the share issued to A/N. One share of Charter's Class B common stock has a number of votes reflecting the voting power of the Charter Holdings common units held by A/N as of the applicable record date on an as-exchanged basis, and is generally intended to reflect A/N's economic interests in Charter Holdings.

The following table summarizes our shares outstanding for the three years ended December 31, 2022:

	Class A Common Stock	Class B Common Stock
BALANCE, December 31, 2019	209,975,963	1
Issuance of equity	55,294	—
Exercise of stock options	3,160,065	—
Restricted stock issuances, net of cancellations	5,992	—
Restricted stock unit vesting	753,139	—
Purchase of treasury stock	(20,219,461)	—
BALANCE, December 31, 2020	193,730,992	1
Exercise of stock options	1,568,488	—
Restricted stock issuances, net of cancellations	4,627	—
Restricted stock unit vesting	664,771	—
Purchase of treasury stock	(23,227,642)	—
BALANCE, December 31, 2021	172,741,236	1
Exercise of stock options	552,442	—
Restricted stock issuances, net of cancellations	6,845	—
Restricted stock unit vesting	591,647	—
Purchase of treasury stock	(21,240,774)	—
BALANCE, December 31, 2022	152,651,396	1

Share Repurchases

The following represents the Company's purchase of Charter Class A common stock and the effect on the consolidated statements of cash flows during the years ended December 31, 2022, 2021 and 2020.

	Year Ended December 31,					
	2022		2021		2020	
	Shares	\$	Shares	\$	Shares	\$
Share buybacks	20,628,464	\$ 10,095	22,015,125	\$ 15,038	18,444,203	\$ 10,639
Income tax withholding	310,391	182	586,008	393	1,022,783	578
Exercise cost	301,919		626,509		752,475	
	21,240,774	\$ 10,277	23,227,642	\$ 15,431	20,219,461	\$ 11,217

Share buybacks above include shares of Charter Class A common stock purchased from Liberty Broadband Corporation ("Liberty Broadband") pursuant to the LBB Letter Agreement as follows (see Note 19).

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	Year Ended December 31,	
	2022	2021
Number of shares purchased	6,168,174	6,077,664
Amount of shares purchased	\$ 3,034	\$ 4,179

In January 2023, the Company purchased from Liberty Broadband an additional 0.1 million shares of Charter Class A common stock for approximately \$42 million.

As of December 31, 2022, Charter had remaining board authority to purchase an additional \$414 million of Charter's Class A common stock and/or Charter Holdings common units, excluding purchases from Liberty Broadband. The Company also withholds shares of its Class A common stock in payment of income tax withholding owed by employees upon vesting of equity awards as well as exercise costs owed by employees upon exercise of stock options.

In March 2020, pursuant to the terms of the Amended and Restated Stockholders Agreement among Liberty Broadband, A/N and Charter, dated May 23, 2015 (the "Stockholders Agreement"), Charter, Liberty and A/N closed on transactions in which Liberty Broadband and A/N exercised their preemptive right to purchase 35,112 and 20,182 shares, respectively, of Charter Class A common stock for a total purchase price of approximately \$23 million.

At the end of each fiscal year, Charter's board of directors approves the retirement of the then currently outstanding treasury stock and those shares were retired as of December 31, 2022 and 2021. The Company accounts for treasury stock using the cost method and includes treasury stock as a component of total shareholders' equity. Upon retirement, these treasury shares are allocated between additional paid-in capital and retained earnings (accumulated deficit) based on the cost of original issue included in additional paid-in capital.

10. Noncontrolling Interests

Noncontrolling interests represents consolidated subsidiaries of which the Company owns less than 100%. The Company is a holding company whose principal asset is a controlling equity interest in Charter Holdings, the indirect owner of the Company's cable systems. Noncontrolling interests on the Company's balance sheet primarily includes A/N's equity interests in Charter Holdings, which is comprised of a common ownership interest and prior to June 18, 2021, a convertible preferred ownership interest.

On June 18, 2021, the Company caused the conversion of all of A/N's 25 million Charter Holdings convertible preferred units into Charter Holdings common units. Each preferred unit was converted into 0.37334 Charter Holdings common unit, representing a conversion price of \$267.85 per unit, based on a conversion feature as defined in the Limited Liability Company Agreement of Charter Holdings, resulting in the issuance of a total of 9.3 million common units to A/N. The convertible preferred units had a face amount of \$2.5 billion and paid a 6% annual preferred dividend which was paid quarterly in cash. Net income of Charter Holdings attributable to A/N's preferred noncontrolling interest for financial reporting purposes was based on the preferred dividend which was \$70 million for the year ended December 31, 2021 and \$150 million for the year ended December 31, 2020.

As of December 31, 2022, A/N held 18.2 million Charter Holdings common units which are exchangeable at any time into either Charter Class A common stock on a one-for-one basis, or, at Charter's option, cash, based on the then current market price of Charter Class A common stock. Net income of Charter Holdings attributable to A/N's common noncontrolling interest for financial reporting purposes is based on the weighted average effective common ownership interest of approximately 11% during 2022, 7% prior to the conversion of the preferred units and 11% after conversion during 2021 and 8% during 2020, and was \$792 million, \$594 million and \$303 million for the years ended December 31, 2022, 2021 and 2020, respectively. Charter Holdings is required to make quarterly cash tax distributions (with annual true-ups) on a pro rata basis to its partners based on the partner with the highest proportionate cash tax requirement. To the extent such tax distributions would exceed Charter's cash tax requirements, it may waive its entitlement to tax distributions and, instead, issue a non-pro rata "advance" to A/N, which will accrue interest at a money market rate and will reduce A/N's exchange value into cash or Charter Class A common stock. Charter Holdings distributed \$110 million, \$4 million and \$3 million to A/N as a pro rata tax distribution on its common units during the years ended December 31, 2022, 2021 and 2020, respectively.

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The following table represents Charter Holdings' purchase of Charter Holdings common units from A/N pursuant to the A/N Letter Agreement (see Note 19) and the effect on total shareholders' equity during the years ended December 31, 2022, 2021 and 2020.

	Year Ended December 31,		
	2022	2021	2020
Number of units purchased	3,171,681	3,274,391	2,637,483
Amount of units purchased	\$ 1,602	\$ 2,234	\$ 1,462
Decrease in noncontrolling interest based on carrying value	\$ (700)	\$ (808)	\$ (656)
Decrease in additional paid-in-capital, net of tax	\$ (681)	\$ (1,077)	\$ (606)

Total shareholders' equity was also adjusted during the years ended December 31, 2022, 2021 and 2020 due to changes in Charter Holdings' ownership, including the impact of the preferred unit conversion discussed above, as follows.

	Year Ended December 31,		
	2022	2021	2020
Decrease in noncontrolling interest	\$ (659)	\$ (2,153)	\$ (534)
Increase in additional paid-in-capital, net of tax	\$ 497	\$ 1,625	\$ 403

As a result of the preferred unit conversion, the preferred noncontrolling interest carrying amount of \$3.2 billion was reclassified to common noncontrolling interest and remeasured to \$2.0 billion representing the relative effective Charter Holdings common ownership amount in all Charter Holdings partnership capital account balances resulting in a \$1.2 billion reclass from noncontrolling interest to additional paid-in capital. A deferred tax liability of \$300 million was recorded with the offset to additional paid-in capital as part of the Charter Holdings ownership change equity adjustments.

11. Accounting for Derivative Instruments and Hedging Activities

Cross-currency derivative instruments are used to manage foreign exchange risk on the Sterling Notes by effectively converting £1.275 billion aggregate principal amount of fixed-rate British pound sterling denominated debt, including annual interest payments and the payment of principal at maturity, to fixed-rate U.S. dollar denominated debt. The cross-currency swaps have maturities of June 2031 and July 2042.

The Company's derivative instruments are not designated as hedges and are marked to fair value each period, with the impact recorded as a gain or loss on financial instruments in the consolidated statements of operations in other income (expenses), net. While these derivative instruments are not designated as hedges for accounting purposes, management continues to believe such instruments are closely correlated with the respective debt, thus managing associated risk. The fair value of the Company's cross-currency derivatives, which are classified within Level 2 of the valuation hierarchy, was \$570 million and \$290 million and is included in other long-term liabilities on its consolidated balance sheets as of December 31, 2022 and 2021, respectively.

The effect of financial instruments are recorded in other income (expenses), net in the consolidated statements of operations and consisted of the following.

	Year Ended December 31,		
	2022	2021	2020
Change in fair value of cross-currency derivative instruments	\$ (280)	\$ (106)	\$ 40
Foreign currency remeasurement of Sterling Notes to U.S. dollars	185	20	(55)
Loss on financial instruments, net	\$ (95)	\$ (86)	\$ (15)

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12. Revenues

The Company's revenues by product line are as follows:

	Year Ended December 31,		
	2022	2021	2020
Internet	\$ 22,222	\$ 21,094	\$ 18,521
Video	17,460	17,630	17,432
Voice	1,559	1,598	1,806
Residential revenue	41,241	40,322	37,759
Small and medium business	4,301	4,170	3,964
Enterprise	2,677	2,573	2,468
Commercial revenue	6,978	6,743	6,432
Advertising sales	1,882	1,594	1,699
Mobile	3,042	2,178	1,364
Other	879	845	843
	<u>\$ 54,022</u>	<u>\$ 51,682</u>	<u>\$ 48,097</u>

Residential Services

Residential customers are offered Internet, video, voice and mobile services primarily on a subscription basis. Mobile services are sold under unlimited data plans or by-the-gig data usage plans. The Company often provides multiple services to a customer. The transaction price for a bundle of services may be less than the sum of the standalone selling prices of each individual service. The Company allocates the bundle discount among the services to which the discount relates based on the relative standalone selling prices of those services. Generally, directly observable standalone selling prices are used for the revenue allocation. Customers are invoiced for subscription services in advance of the service period. Each subscription service provided is accounted for as a distinct performance obligation and revenue is recognized ratably over the monthly service period as the subscription services are delivered. Residential customers may generally cancel their subscriptions at the end of their monthly service period without penalty. Each optional service purchased is generally accounted for as a distinct performance obligation when purchased and revenue is recognized when the service is provided. For customer premise equipment ("CPE") where such CPE would qualify as a lease, the Company combines the operating lease with the subscription service revenue as a single performance obligation as the subscription service is the predominant component. Installation fees are deferred over the period the fee remains material to the customer, which the Company has estimated to be approximately six months. Sales commission costs are expensed as incurred as the amortization period is less than one year. Right-of-entry costs represent upfront costs incurred related to agreements entered into with multiple dwelling units ("MDUs") including landlords, real estate companies or owners to gain access to a building in order to market and service customers who reside in the building. Right-of-entry costs are deferred as contract fulfillment costs and recognized over the term of the contracts.

Customers can purchase mobile equipment, including devices and accessory products, and have the option to pay for devices under interest-free monthly installment plans. The Company does not impute interest on equipment installment plans sold through its direct channel as the inherent financing component is not considered significant based on the commercial objective of the plans, interest rates prevailing in the marketplace and credit risks of the Company's customers. The sale of equipment is a separate performance obligation, therefore, revenue is recognized from the sale of equipment upon delivery and acceptance by the customer.

Fees imposed on the Company by various governmental authorities are passed through on a monthly basis to the Company's customers and are periodically remitted to authorities. Fees of \$1.1 billion for each of the years ended December 31, 2022, 2021 and 2020 are reported in revenues on a gross basis with a corresponding operating expense because the Company is acting as a principal. Certain taxes, such as sales taxes imposed on the Company's customers, collected and remitted to state and local authorities, are recorded on a net basis because the Company is acting as an agent in such situations.

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Commercial Services

Small and medium business ("SMB") customers are offered Internet, video voice and mobile services similar to those provided to residential customers. SMB customers may generally cancel their subscriptions at the end of their monthly service period without penalty. Each subscription service provided is accounted for as a distinct performance obligation and revenue is recognized ratably over the monthly service period as the subscription services are delivered.

Services to enterprise clients include more tailored communications products and managed service solutions to larger businesses, as well as high-capacity last-mile data connectivity services to mobile and wireline carriers on a wholesale basis. Services are primarily offered on a subscription basis with a contractually specified and non-cancelable service period, which is generally one to seven years with a weighted average term of approximately three years. Each subscription service provided is accounted for as a distinct performance obligation and revenue is recognized ratably over the contract period as the subscription services are delivered. Enterprise subscription services are billed as monthly recurring charges to customers and related installation services, if applicable, are billed upon completion of the customer installation. Installation services are not accounted for as distinct performance obligations, but rather a component of the connectivity services, and therefore upfront installation fees are deferred and recognized as revenue over the related contract period. Enterprise sales commission costs are deferred and recognized using a portfolio approach over a weighted-average contract period.

Advertising Services

The Company offers local, regional and national businesses the opportunity to advertise in individual and multiple service areas on cable television networks and digital outlets. Placement of advertising is accounted for as a distinct performance obligation and revenue is recognized at the point in time when the advertising is distributed. In some service areas, the Company has formed advertising interconnects or entered into representation agreements with other video distributors, under which the Company sells advertising on behalf of those distributors. In other service areas, the Company has entered into representation agreements under which another operator in the area will sell advertising on the Company's behalf. For representation arrangements in which the Company controls the sale of advertising and acts as the principal to the transaction, the Company recognizes revenue earned from the advertising customer on a gross basis and the amount remitted to the distributor as an operating expense. For other representation arrangements in which the Company does not control the sale of advertising and acts as an agent to the transaction, the Company recognizes revenue net of any fee remitted to the distributor.

Other balances that are not separately presented on the consolidated balance sheets that relate to the recognition of revenue and collection of the related cash, as well as the deferred costs associated with our contracts with customers consist of the following for the periods presented:

	December 31,	
	2022	2021
Accounts receivable, net:		
Equipment installment plan receivables, net	\$ 577	\$ 391
Other noncurrent assets:		
Equipment installment plan receivables, net	\$ 261	\$ 189
Contract acquisition and fulfillment costs	\$ 505	\$ 496
Accounts payables and accrued liabilities:		
Customer prepayments and upfront deferred installation fees	\$ 511	\$ 461

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Activity in the allowance for doubtful accounts is summarized as follows for the years presented:

	Year Ended December 31,		
	2022	2021	2020
Balance, beginning of period	\$ 157	\$ 217	\$ 180
Charged to expense	758	484	560
Uncollected balances written off, net of recoveries	(696)	(544)	(523)
Balance, end of period	\$ 219	\$ 157	\$ 217

13. Operating Costs and Expenses

Operating costs and expenses, exclusive of items shown separately in the consolidated statements of operations, consist of the following for the periods presented:

	Year Ended December 31,		
	2022	2021	2020
Programming	\$ 11,620	\$ 11,844	\$ 11,401
Regulatory, connectivity and produced content	2,303	2,494	2,183
Costs to service customers	7,772	7,393	7,472
Marketing	3,339	3,071	3,031
Mobile	3,385	2,489	1,765
Other	4,457	4,191	4,078
	\$ 32,876	\$ 31,482	\$ 29,930

Programming costs consist primarily of costs paid to programmers for basic, premium, digital, video on demand and pay-per-view programming. Regulatory, connectivity and produced content costs represent payments to franchise and regulatory authorities, costs directly related to providing video, Internet and voice services as well as payments for sports, local and news content produced by the Company. Included in regulatory, connectivity and produced content costs are content acquisition costs for the Los Angeles Lakers' basketball games and Los Angeles Dodgers' baseball games, which are recorded as games are exhibited over the contract period. Costs to service customers include costs related to field operations, network operations and customer care for the Company's residential and SMB customers, including internal and third-party labor for the non-capitalizable portion of installations, service and repairs, maintenance, bad debt expense, billing and collection, occupancy and vehicle costs. Marketing costs represent the costs of marketing to current and potential residential and commercial customers including labor costs. Mobile costs represent costs associated with the Company's mobile service such as device and service costs, marketing, sales and commissions, retail stores, personnel costs, taxes, among others. Other includes corporate overhead, advertising sales expenses, indirect costs associated with the Company's enterprise business customers and regional sports and news networks, property tax and insurance expense and stock compensation expense, among others.

14. Other Operating Expenses, Net

Other operating expenses, net consist of the following for the years presented:

	Year Ended December 31,		
	2022	2021	2020
Special charges, net	\$ 273	\$ 249	\$ 90
(Gain) loss on sale of assets, net	8	80	(32)
	\$ 281	\$ 329	\$ 58

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Special charges, net

Special charges, net primarily includes net amounts of litigation settlements and employee termination costs. For the year ended December 31, 2022, special charges, net also includes an impairment on non-strategic assets and is offset by a gain related to the settlement of a multiemployer pension plan. For the year ended December 31, 2021, special charges, net also includes the \$220 million settlement with Sprint Communications Company L.P. and T-Mobile USA, Inc.

(Gain) loss on sale of assets, net

(Gain) loss on sale of assets, net includes a \$36 million impairment of non-strategic assets held for sale during the year ended December 31, 2021.

15. Other Income (Expenses), Net

Other income (expenses), net consist of the following for the periods presented:

	Year Ended December 31,		
	2022	2021	2020
Loss on extinguishment of debt (see Note 8)	\$ (3)	\$ (144)	\$ (143)
Loss on financial instruments, net (see Note 11)	(95)	(86)	(15)
Other pension benefits (costs), net (see Note 21)	254	305	(66)
Loss on equity investments, net (see Note 5)	(100)	(176)	(31)
	<u>\$ 56</u>	<u>\$ (101)</u>	<u>\$ (255)</u>

16. Stock Compensation Plans

Charter's stock incentive plan provides for grants of nonqualified stock options, incentive stock options, stock appreciation rights, dividend equivalent rights, performance units and performance shares, share awards, phantom stock, restricted stock units and restricted stock. Directors, officers and other employees of the Company and its subsidiaries, as well as others performing consulting services for the Company, are eligible for grants under the stock incentive plan. The stock incentive plan allows for the issuance of up to 16 million shares of Charter Class A common stock (or units convertible into Charter Class A common stock).

Restricted stock, restricted stock units and stock options are measured at the grant date fair value and amortized to stock compensation expense over the requisite service period. The fair value of stock options is estimated on the date of grant using the Black-Scholes option-pricing model. The grant date weighted average assumptions used during the years ended December 31, 2022, 2021 and 2020 were: risk-free interest rate of 1.7%, 0.7% and 1.4%, respectively; expected lives of 5.7 years, 5.9 years and 5.5 years, respectively; and expected volatility of 28% during the year ended December 31, 2022 and 27% during each of the years ended December 31, 2021 and 2020. The Company's volatility assumptions represent management's best estimate and were based on a review of historical and implied volatility. Expected lives were estimated using historical exercise data. The valuations assume no dividends are paid. The Company has elected an accounting policy to assume zero forfeitures for stock awards grants and account for forfeitures when they occur.

Stock options and restricted stock units generally cliff vest three years from the date of grant. Stock options generally expire ten years from the grant date and restricted stock units have no voting rights. Restricted stock generally vests one year from the date of grant.

As of December 31, 2022, total unrecognized compensation remaining to be recognized in future periods totaled \$211 million for stock options, \$1.0 million for restricted stock and \$275 million for restricted stock units and the weighted average period over which they are expected to be recognized is 2 years for stock options, 4 months for restricted stock and 2 years for restricted stock units. The Company recorded \$470 million, \$430 million and \$351 million of stock compensation expense for the years ended December 31, 2022, 2021 and 2020, respectively, which is included in operating costs and expenses.

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A summary of the activity for Charter's stock options for the years ended December 31, 2022, 2021 and 2020, is as follows (shares in thousands, except per share data):

	Year Ended December 31,								
	2022			2021			2020		
	Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value	Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value	Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value
Outstanding, beginning of period	8,433	\$ 362.26		8,842	\$ 312.95		10,549	\$ 241.14	
Granted	1,469	\$ 577.64		1,295	\$ 629.57		1,672	\$ 536.27	
Exercised	(552)	\$ 295.51	\$ 133	(1,568)	\$ 295.46	\$ 606	(3,160)	\$ 191.43	\$ 1,176
Canceled	(170)	\$ 570.44		(136)	\$ 476.90		(219)	\$ 312.94	
Outstanding, end of period	<u>9,180</u>	<u>\$ 396.89</u>	<u>\$ 468</u>	<u>8,433</u>	<u>\$ 362.26</u>		<u>8,842</u>	<u>\$ 312.95</u>	
Weighted average remaining contractual life	6 years			6 years			7 years		
Options exercisable, end of period	<u>5,320</u>	\$ 266.78	\$ 467	<u>4,102</u>	\$ 237.45		<u>2,940</u>	\$ 220.78	
Options expected to vest, end of period	<u>3,860</u>	\$ 576.23	\$ —						
Weighted average fair value of options granted	<u>\$ 172.24</u>			<u>\$ 171.21</u>			<u>\$ 148.02</u>		

A summary of the activity for Charter's restricted stock for the years ended December 31, 2022, 2021 and 2020, is as follows (shares in thousands, except per share data):

	Year Ended December 31,					
	2022		2021		2020	
	Shares	Weighted Average Grant Price	Shares	Weighted Average Grant Price	Shares	Weighted Average Grant Price
Outstanding, beginning of period	5	\$ 654.33	6	\$ 504.53	8	\$ 359.33
Granted	7	\$ 494.72	5	\$ 654.33	6	\$ 504.53
Vested	(5)	\$ 654.33	(6)	\$ 504.53	(8)	\$ 359.33
Canceled	—	\$ —	—	\$ —	—	\$ —
Outstanding, end of period	<u>7</u>	<u>\$ 494.72</u>	<u>5</u>	<u>\$ 654.33</u>	<u>6</u>	<u>\$ 504.53</u>

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A summary of the activity for Charter's restricted stock units for the years ended December 31, 2022, 2021 and 2020, is as follows (shares in thousands, except per share data):

	Year Ended December 31,					
	2022		2021		2020	
	Shares	Weighted Average Grant Price	Shares	Weighted Average Grant Price	Shares	Weighted Average Grant Price
Outstanding, beginning of period	1,294	\$ 449.03	1,651	\$ 337.82	2,059	\$ 249.45
Granted	638	\$ 522.45	367	\$ 629.47	423	\$ 509.64
Vested	(592)	\$ 307.67	(665)	\$ 269.88	(753)	\$ 194.40
Canceled	(74)	\$ 569.11	(59)	\$ 467.26	(78)	\$ 317.45
Outstanding, end of period	1,266	\$ 545.00	1,294	\$ 449.03	1,651	\$ 337.82

17. Income Taxes

The Company recognizes deferred tax assets and liabilities for temporary differences between the financial reporting basis and the tax basis of the Company's assets and liabilities and expected benefits of utilizing loss carryforwards. Valuation allowances are established when management determines that it is more likely than not that some portion or the entire deferred tax asset will not be realized. In evaluating the need for a valuation allowance, management takes into account various factors, including the expected level of future taxable income, available tax planning strategies and reversals of existing taxable temporary differences. The impact on deferred taxes of changes in tax rates and tax law, if any, applied to the years during which temporary differences are expected to be settled, are reflected in the consolidated financial statements in the period of enactment. In determining the Company's tax provision for financial reporting purposes, the Company establishes a reserve for uncertain tax positions unless such positions are determined to be "more likely than not" of being sustained upon examination, based on their technical merits. There is considerable judgment involved in making such a determination. The Company recognizes interest and penalties accrued on uncertain income tax positions as part of the income tax provision.

Substantially all of the Company's operations are held through Charter Holdings and its direct and indirect subsidiaries. Charter Holdings and the majority of its subsidiaries are generally limited liability companies that are not subject to income tax. However, certain of these limited liability companies are subject to state income tax. In addition, the subsidiaries that are corporations are subject to income tax. Generally, the taxable income, gains, losses, deductions and credits of Charter Holdings are passed through to its members, Charter and A/N. Charter is responsible for its share of taxable income or loss of Charter Holdings allocated to it in accordance with the Charter Holdings Limited Liability Company Agreement ("LLC Agreement") and partnership tax rules and regulations. As a result, Charter's primary deferred tax component recorded in the consolidated balance sheets relates to its excess financial reporting outside basis, excluding amounts attributable to nondeductible goodwill, over Charter's tax basis in the investment in Charter Holdings.

Charter Holdings, the indirect owner of the Company's cable systems, generally allocates its taxable income, gains, losses, deductions and credits proportionately according to the members' respective ownership interests, except for special allocations required under Section 704(c) of the Internal Revenue Code and the Treasury Regulations ("Section 704(c)"). Pursuant to Section 704(c) and the LLC Agreement, each item of income, gain, loss and deduction with respect to any property contributed to the capital of the partnership shall, solely for tax purposes, be allocated among the members so as to take into account any variation between the adjusted basis of such property to the partnership for U.S. federal income tax purposes and its initial gross asset value using the "traditional method" as described in the Treasury Regulations.

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Income Tax Expense

For the years ended December 31, 2022, 2021, and 2020, the Company recorded deferred income tax expense as shown below. The tax provision in future periods will vary based on current and future temporary differences, as well as future operating results.

	Year Ended December 31,		
	2022	2021	2020
Current benefit (expense):			
Federal income taxes	\$ (1,178)	\$ (12)	\$ 7
State income taxes	(348)	(230)	(168)
Current income tax expense	(1,526)	(242)	(161)
Deferred benefit (expense):			
Federal income taxes	(55)	(1,049)	(536)
State income taxes	(32)	223	71
Deferred income tax expense	(87)	(826)	(465)
Income tax expense	\$ (1,613)	\$ (1,068)	\$ (626)

The Company's effective tax rate differs from that derived by applying the applicable federal income tax rate of 21% for the years ended December 31, 2022, 2021 and 2020 as follows:

	Year Ended December 31,		
	2022	2021	2020
Statutory federal income taxes	\$ (1,567)	\$ (1,341)	\$ (903)
Statutory state income taxes, net	(257)	(193)	(122)
Change in uncertain tax positions	(163)	(79)	(57)
Nondeductible expenses	(42)	(27)	(15)
Net income attributable to noncontrolling interest	195	163	112
Excess stock compensation	59	163	290
Federal tax credits	76	46	35
Tax rate changes	47	191	33
Other	39	9	1
Income tax expense	\$ (1,613)	\$ (1,068)	\$ (626)

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Deferred Tax Assets (Liabilities)

The tax effects of these temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities at December 31, 2022 and 2021 are presented below.

	December 31,	
	2022	2021
Deferred tax assets:		
Carryforwards	\$ 375	\$ 325
Accrued and other	512	612
Total gross deferred tax assets	887	937
Less: valuation allowance	(40)	(36)
Deferred tax assets	847	901
Deferred tax liabilities:		
Investment in partnership	(19,899)	(19,986)
Accrued and other	(6)	(11)
Deferred tax liabilities	(19,905)	(19,997)
Net deferred tax liabilities	\$ (19,058)	\$ (19,096)

The deferred tax liabilities on the investment in partnership above includes approximately \$54 million and \$57 million net deferred tax liabilities relating to certain indirect subsidiaries that file separate state income tax returns at December 31, 2022 and 2021, respectively.

Carryforwards

Charter has federal tax net operating loss carryforwards that expire in 2035 resulting from the operations of Charter Communications Holdings Company, LLC ("Charter Holdco") and its subsidiaries and from loss carryforwards received as a result of the merger with Time Warner Cable Inc. ("TWC"). In addition, Charter has state tax net operating loss carryforwards that generally expire in the years 2023 through 2042. Charter's federal tax loss carryforwards are subject to Section 382 and other restrictions. Also included in carryforwards is Charter's Section 163(j) interest limitation, which is based on interest expense that is not deductible in the current year due to taxable income limitations. The limited interest carryforward has an indefinite carryforward period and will become deductible when Charter generates taxable income sufficient to overcome the limitation.

Tax Receivable Agreement

Under the LLC Agreement, A/N has the right to exchange at any time some or all of its common units in Charter Holdings for Charter's Class A common stock or cash, at Charter's option. Pursuant to a Tax Receivable Agreement ("TRA") between Charter and A/N, Charter must pay to A/N 50% of the tax benefit when realized by Charter from the step-up in tax basis resulting from any future exchange or sale of the common units. Charter did not record a liability for this obligation as of the acquisition date since the tax benefit is dependent on uncertain future events that are outside of Charter's control, such as the timing of a conversion or exchange. A future exchange or sale is not based on a fixed and determinable date and the exchange or sale is not certain to occur. If all of A/N's partnership units were to be exchanged or sold in the future, the undiscounted value of the obligation is currently estimated to be in the range of zero to \$3.5 billion depending on measurement of the tax step-up in the future and Charter's ability to realize the tax benefit in the periods following the exchange or sale. Factors impacting these calculations include, but are not limited to, the fair value of the equity at the time of the exchange and the effective tax rates when the benefits are realized.

Uncertain Tax Positions

The net amount of the unrecognized tax benefits recorded as of December 31, 2022 that could impact the effective tax rate is \$430 million. The Company has determined that it is reasonably possible that its existing reserve for uncertain tax positions as

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of December 31, 2022 could decrease by approximately \$37 million during the year ended December 31, 2023 related to various ongoing audits, settlement discussions and expiration of statute of limitations with various state and local agencies; however, various events could cause the Company's current expectations to change in the future. These uncertain tax positions, if ever recognized in the financial statements, would be recorded in the consolidated statements of operations as part of the income tax provision. A reconciliation of the beginning and ending amount of unrecognized tax benefits, exclusive of interest and penalties, included in other long-term liabilities on the accompanying consolidated balance sheets of the Company is as follows:

BALANCE, December 31, 2020	\$	298
Activity on prior year tax positions		(5)
Additions on current year tax positions		94
Reductions on settlements and expirations with taxing authorities		(10)
BALANCE, December 31, 2021		377
Activity on prior year tax positions		(20)
Additions on current year tax positions		166
Reductions on settlements and expirations with taxing authorities		(8)
BALANCE, December 31, 2022	\$	515

Charter is currently under examination by the Internal Revenue Service ("IRS") for income tax purposes for 2016 and 2019. Charter's 2020 and 2021 tax years remain open for examination and assessment. Charter's 2017 and 2018 tax years remain open solely for purposes of loss and credit carryforwards. Charter's short period return dated May 17, 2016 (prior to the merger with TWC and acquisition of Bright House Networks, LLC ("Bright House")) and prior years remain open solely for purposes of examination of Charter's loss and credit carryforwards. The IRS is currently examining Charter Holdings' income tax return for 2016, 2019 and 2021. Charter Holdings' 2020 tax year remains open for examination and assessment, while 2017 and 2018 remain open solely for purposes of credit carryforwards. The IRS is currently examining TWC's income tax returns for 2011 through 2015. Prior to TWC's separation from Time Warner Inc. ("Time Warner") in March 2009, TWC was included in the consolidated U.S. federal and certain state income tax returns of Time Warner. The IRS has examined Time Warner's 2008 through 2010 income tax returns and the appeal results are being evaluated. The Company does not anticipate that these examinations will have a material impact on the Company's consolidated financial position or results of operations. In addition, the Company is also subject to ongoing examinations of the Company's tax returns by state and local tax authorities for various periods. Activity related to these state and local examinations did not have a material impact on the Company's consolidated financial position or results of operations during the year ended December 31, 2022, nor does the Company anticipate a material impact in the future.

18. Earnings Per Share

Basic earnings per common share is computed by dividing net income attributable to Charter shareholders by the weighted average number of shares of common stock outstanding during the period. Diluted earnings per common share considers the impact of potentially dilutive securities using the treasury stock and if-converted methods and is based on the weighted average number of shares used for the basic earnings per share calculation, adjusted for the dilutive effect of stock options, restricted stock, restricted stock units, equity awards with market conditions and Charter Holdings convertible preferred units and common units. Charter Holdings common units of 20 million and 19 million for the years ended December 31, 2022 and 2021, respectively, and Charter Holdings common and convertible preferred units of 26 million for the year ended December 31, 2020

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were not included in the computation of diluted earnings per share as their effect would have been antidilutive. The following is the computation of diluted earnings per common share for the years presented.

	Year Ended December 31,		
	2022	2021	2020
Numerator:			
Net income attributable to Charter shareholders	\$ 5,055	\$ 4,654	\$ 3,222
Effect of dilutive securities:			
Charter Holdings convertible preferred units	—	70	—
Net income attributable to Charter shareholders after assumed conversions	\$ 5,055	\$ 4,724	\$ 3,222
Denominator:			
Weighted average common shares outstanding, basic	161,501,355	183,669,369	203,316,483
Effect of dilutive securities:			
Assumed exercise or issuance of shares relating to stock plans	2,932,241	5,052,041	5,956,764
Weighted average Charter Holdings convertible preferred units	—	4,321,538	—
Weighted average common shares outstanding, diluted	164,433,596	193,042,948	209,273,247
Basic earnings per common share attributable to Charter shareholders	\$ 31.30	\$ 25.34	\$ 15.85
Diluted earnings per common share attributable to Charter shareholders	\$ 30.74	\$ 24.47	\$ 15.40

19. Related Party Transactions

The following sets forth certain transactions in which the Company and the directors, executive officers, and other related parties of the Company are involved or, in the case of the management arrangements, subsidiaries that are debt issuers that pay certain of their parent companies for services.

Charter is a party to management arrangements with its subsidiary, Spectrum Management Holding Company, LLC ("Spectrum Management") and certain of their subsidiaries. Under these agreements, Charter, Spectrum Management and Charter Holdco provide management services for the cable systems owned or operated by their subsidiaries. Costs associated with providing these services are charged directly to the Company's operating subsidiaries. All other costs incurred on behalf of Charter's operating subsidiaries are considered a part of the management fee. These costs are recorded as a component of operating costs and expenses, in the accompanying consolidated financial statements. The management fee charged to the Company's operating subsidiaries approximated the expenses incurred by Spectrum Management, Charter Holdco and Charter on behalf of the Company's operating subsidiaries in 2022, 2021 and 2020.

Liberty Broadband and A/N

Under the terms of the Stockholders Agreement, the number of Charter's directors is fixed at 13. Two designees selected by A/N are members of the board of directors of Charter and three designees selected by Liberty Broadband are members of the board of directors of Charter. The remaining eight directors are not designated by either A/N or Liberty Broadband. Each of A/N and Liberty Broadband is entitled to nominate at least one director to each of the committees of Charter's board of directors, subject to applicable stock exchange listing rules and certain specified voting or equity ownership thresholds for each of A/N and Liberty Broadband, and provided that the Nominating and Corporate Governance Committee and the Compensation and Benefit Committee each have at least a majority of directors independent from A/N, Liberty Broadband and Charter (referred to as the "unaffiliated directors"). Each of the Nominating and Corporate Governance Committee and the Compensation and Benefits Committee is currently comprised of three unaffiliated directors and one designee of each of A/N and Liberty Broadband. A/N and Liberty Broadband also have certain other committee designation and governance rights. Mr. Thomas Rutledge is the Executive Chairman of the board of Charter and Mr. Christopher Winfrey, the Company's President and CEO, is a non-voting board observer.

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In December 2016, Charter and A/N entered into a letter agreement, as amended in December 2017 (the “A/N Letter Agreement”) that requires A/N to sell to Charter or to Charter Holdings, on a monthly basis, a number of shares of Charter Class A common stock or Charter Holdings common units that represents a pro rata participation by A/N and its affiliates in any repurchases of shares of Charter Class A common stock from persons other than A/N effected by Charter during the immediately preceding calendar month, at a purchase price equal to the average price paid by Charter for the shares repurchased from persons other than A/N during such immediately preceding calendar month. A/N and Charter both have the right to terminate or suspend the pro rata repurchase arrangement on a prospective basis. Pursuant to the TRA between Charter and A/N, Charter must pay to A/N 50% of the tax benefit when realized by Charter from the step-up in tax basis resulting from any future exchange or sale of the common units. See Note 17 for more information.

In February 2021, Charter and Liberty Broadband entered into a letter agreement (the “LBB Letter Agreement”). The LBB Letter Agreement implements Liberty Broadband’s obligations under the Stockholders Agreement to participate in share repurchases by Charter. Under the LBB Letter Agreement, Liberty Broadband will sell to Charter, generally on a monthly basis, a number of shares of Charter Class A common stock representing an amount sufficient for Liberty Broadband’s ownership of Charter to be reduced such that it does not exceed the ownership cap then applicable to Liberty Broadband under the Stockholders Agreement at a purchase price per share equal to the volume weighted average price per share paid by Charter for shares repurchased during such immediately preceding calendar month other than (i) purchases from A/N, (ii) purchases in privately negotiated transactions or (iii) purchases for the withholding of shares of Charter Class A common stock pursuant to equity compensation programs of Charter.

Gregory Maffei, a director of Charter and President and CEO and director and holder of 7.5% voting interest in Liberty Broadband, is Chairman of the board of directors of Qurate Retail, Inc. (“Qurate”) and Dr. John Malone, a director emeritus of Charter, Chairman of the board of directors of Liberty Broadband and holder of 49.0% of voting interest in Liberty Broadband, also serves on the Qurate board of directors. As reported in SEC filings of Qurate, Mr. Maffei and Dr. Malone, Mr. Maffei has ownership of an approximate 19.8% voting interest in Qurate and Dr. Malone has ownership of an approximate 6.7% voting interest in Qurate. Qurate wholly owns HSN, Inc. (“HSN”) and QVC, Inc. (“QVC”). The Company has programming relationships with HSN and QVC. For the years ended December 31, 2022, 2021 and 2020, the Company recorded revenue in aggregate of approximately \$43 million, \$48 million and \$50 million, respectively, from HSN and QVC as part of channel carriage fees and revenue sharing arrangements for home shopping sales made to customers in the Company’s footprint.

Equity Investments

The Company has agreements with certain equity investees (see Note 5) pursuant to which the Company has made or received related party transaction payments for the receipt of goods or services. The Company recorded payments to equity investees totaling \$213 million, \$229 million and \$225 million during the years ended December 31, 2022, 2021 and 2020, respectively.

20. Commitments and Contingencies

Commitments

The following table summarizes the Company’s payment obligations as of December 31, 2022 for its contractual obligations.

	Total	2023	2024	2025	2026	2027	Thereafter
Programming Minimum Commitments ^(a)	\$ 55	\$ 55	\$ —	\$ —	\$ —	\$ —	\$ —
Other ^(b)	13,398	2,707	2,202	820	753	739	6,177
	<u>\$ 13,453</u>	<u>\$ 2,762</u>	<u>\$ 2,202</u>	<u>\$ 820</u>	<u>\$ 753</u>	<u>\$ 739</u>	<u>\$ 6,177</u>

^(a) The Company pays programming fees under multi-year contracts, typically based on a flat fee per customer, which may be fixed for the term, or may in some cases escalate over the term. Programming costs included in the statements of operations were \$11.6 billion, \$11.8 billion and \$11.4 billion for the years ended December 31, 2022, 2021 and 2020 respectively. Certain of the Company’s programming agreements are based on a flat fee per month or have guaranteed minimum payments. The table sets forth the aggregate guaranteed minimum commitments under the Company’s programming contracts.

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- (b) “Other” represents other guaranteed minimum commitments, including rights negotiated directly with content owners for distribution on company-owned channels or networks, commitments related to our role as an advertising and distribution sales agent for third party-owned channels or networks, commitments to our customer premise equipment and device vendors and contractual obligations related to third-party network augmentation.

The following items are not included in the contractual obligation table due to various factors discussed below. However, the Company incurs these costs as part of its operations:

- The Company rents utility poles used in its operations. Generally, pole rentals are cancelable on short notice, but the Company anticipates that such rentals will recur. Rent expense incurred for pole rental attachments for the years ended December 31, 2022, 2021 and 2020 was \$207 million, \$200 million and \$192 million, respectively.
- The Company pays franchise fees under multi-year franchise agreements based on a percentage of revenues generated from video service per year. The Company also pays other franchise related costs, such as public education grants, under multi-year agreements. Franchise fees and other franchise-related costs included in the accompanying statement of operations were \$730 million, \$733 million and \$741 million for the years ended December 31, 2022, 2021 and 2020 respectively.
- The Company has \$484 million in letters of credit, of which \$37 million is secured under the Charter Operating credit facility, primarily to its various casualty carriers as collateral for reimbursement of workers' compensation, auto liability and general liability claims, as well as \$346 million of surety bonds.

Legal Proceedings

In August 2015, a purported stockholder of Charter, Matthew Sciabacucchi, filed a lawsuit in the Delaware Court of Chancery, on behalf of a putative class of Charter stockholders, challenging the transactions involving Charter, TWC, A/N, and Liberty Broadband announced by Charter on May 26, 2015. The lawsuit, which named as defendants Charter and its board of directors, alleged that the transactions resulted from breaches of fiduciary duty by Charter's directors and that Liberty Broadband improperly benefited from the challenged transactions at the expense of other Charter stockholders. On January 12, 2023, the parties reached a tentative agreement to settle the lawsuit. The settlement is subject to preliminary and final approval by the court and will result in a net payment to Charter as a result of the settlement of the derivative claims by the plaintiffs. The Company cannot provide assurance that this tentative settlement will be finalized and approved by the court. Pending finalization of the settlement and in the event the settlement is not finalized and approved by the court, the Company will continue to vigorously defend this lawsuit. Although Charter is unable to predict the outcome of this lawsuit, it does not expect the outcome will have a material effect on its operations, financial condition or cash flows.

The California Attorney General and the Alameda County, California District Attorney are investigating whether certain of Charter's waste disposal policies, procedures and practices are in violation of the California Business and Professions Code and the California Health and Safety Code. That investigation was commenced in January 2014. A similar investigation involving TWC was initiated in February 2012. Charter is cooperating with these investigations. While the Company is unable to predict the outcome of these investigations, it does not expect that the outcome will have a material effect on its operations, financial condition, or cash flows.

In March 2020, Charter Communications, LLC (“CC, LLC”), an indirect subsidiary of the Company, was named as a defendant in a lawsuit filed in Dallas, Texas related to the fatal stabbing of an individual in her home by an off duty CC, LLC technician: William Goff, as Personal Representative of Betty Jo McClain Thomas, deceased, et al. v. Roy James Holden, Jr. and Charter Communications, LLC, Case No. CC-20-01579-E, pending in County Court at Law No. 5 for Dallas County, Texas. The complaint alleged that CC, LLC was responsible for Mrs. Thomas' death. Following a two phase trial, the jury returned a verdict finding CC, LLC ninety percent at fault for Mrs. Thomas' death, and awarded compensatory damages of \$375 million to plaintiffs and then awarded \$7.0 billion in punitive damages to plaintiffs on July 26, 2022. On October 7, 2022, plaintiffs filed a motion for a judgment that proposed a reduced total award of \$1.1 billion. The trial judge signed the judgment, and CC, LLC posted a \$25 million bond to stay the judgment pending appeals. On January 11, 2023, and after issuing a series of decreasing settlement demands over several months, the plaintiffs issued a new, lower settlement demand to CC, LLC and its insurers, and then on January 18, 2023, plaintiffs also filed a notice of remittitur with the court to further reduce the judgment to \$262 million, comprised of \$87 million in actual damages, and \$175 million in punitive damages. On January 24, 2023 and upon the insistence and demand of its insurers, CC, LLC reached a tentative settlement of this lawsuit at an amount substantially less than the reduced judgment and within CC, LLC's insurance coverage. In the event the settlement is not ultimately finalized, CC, LLC will continue to vigorously defend this lawsuit including pursuing all available appeals.

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The Company is a defendant or co-defendant in several lawsuits involving alleged infringement of various intellectual property relating to various aspects of its businesses. Other industry participants are also defendants in certain of these cases or related cases. In the event that a court ultimately determines that the Company infringes on any intellectual property, the Company may be subject to substantial damages and/or an injunction that could require the Company or its vendors to modify certain products and services the Company offers to its subscribers, as well as negotiate royalty or license agreements with respect to the intellectual property at issue. While the Company believes the lawsuits are without merit and intends to defend the actions vigorously, no assurance can be given that any adverse outcome would not be material to the Company's consolidated financial condition, results of operations, or liquidity. The Company cannot predict the outcome of any such claims nor can it reasonably estimate a range of possible loss.

The Company is party to other lawsuits, claims and regulatory inquiries that arise in the ordinary course of conducting its business. The ultimate outcome of these other legal matters pending against the Company cannot be predicted, and although such lawsuits and claims are not expected individually to have a material adverse effect on the Company's consolidated financial condition, results of operations or liquidity, such lawsuits could have, in the aggregate, a material adverse effect on the Company's consolidated financial condition, results of operations or liquidity. Whether or not the Company ultimately prevails in any particular lawsuit or claim, litigation can be time consuming and costly and injure the Company's reputation.

21. Employee Benefit Plans

Pension Plans

The Company sponsors qualified and unqualified defined benefit pension plans that provide pension benefits to a majority of employees who were employed by TWC before the merger with TWC. Pension benefits are based on formulas that reflect the employees' years of service and compensation during their employment period. Actuarial gains or losses are changes in the amount of either the benefit obligation or the fair value of plan assets resulting from experience different from that assumed or from changes in assumptions. The Company has elected to follow a mark-to-market pension accounting policy for recording the actuarial gains or losses annually during the fourth quarter, or earlier if a remeasurement event occurs during an interim period.

Changes in the projected benefit obligation, fair value of plan assets and funded status of the pension plans from January 1 through December 31 are presented below:

	2022	2021
Projected benefit obligation at beginning of year	\$ 3,374	\$ 3,688
Interest cost	103	97
Actuarial gain	(1,032)	(183)
Settlement	(146)	(173)
Benefits paid	(56)	(55)
Projected benefit obligation at end of year	<u>\$ 2,243</u>	<u>\$ 3,374</u>
Accumulated benefit obligation at end of year	<u>\$ 2,243</u>	<u>\$ 3,374</u>
Fair value of plan assets at beginning of year	\$ 3,457	\$ 3,462
Actual return on plan assets	(675)	219
Employer contributions	3	4
Settlement	(146)	(173)
Benefits paid	(56)	(55)
Fair value of plan assets at end of year	<u>\$ 2,583</u>	<u>\$ 3,457</u>
Funded status	<u>\$ 340</u>	<u>\$ 83</u>

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The components of net periodic benefit (cost) for the years ended December 31, 2022, 2021 and 2020 consisted of the following:

	Year Ended December 31,		
	2022	2021	2020
Interest cost	\$ (103)	\$ (97)	\$ (110)
Expected return on plan assets	156	165	156
Remeasurement gain (loss)	201	237	(112)
Net periodic pension benefit (cost)	\$ 254	\$ 305	\$ (66)

The remeasurement gains (losses) recorded during the years ended December 31, 2022, 2021 and 2020 were primarily driven by changes in the discount rate as well as gains or losses to record pension assets to fair value.

The discount rates used to determine benefit obligations as of December 31, 2022 and 2021 were 5.46% and 3.01%, respectively. The Company utilized the Pri-2012/MP 2020 mortality table published by the Society of Actuaries to measure the benefit obligations as of December 31, 2022 and 2021.

Weighted average assumptions used to determine net periodic benefit costs consisted of the following:

	Year ended December 31,		
	2022	2021	2020
Expected long-term rate of return on plan assets	5.00 %	5.00 %	5.00 %
Discount rate	3.01 %	2.70 %	3.48 %

In developing the expected long-term rate of return on plan assets, the Company considered the pension portfolio's composition, past average rate of earnings and the Company's future asset allocation targets. The weighted average expected long-term rate of return on plan assets and discount rate used to determine net periodic pension benefit (cost) for the year ended December 31, 2023 are expected to be 5.00% and 5.46%, respectively. The Company determined the discount rates used to determine benefit obligations and net periodic pension benefit (cost) based on the yield of a large population of high quality corporate bonds with cash flows sufficient in timing and amount to settle projected future defined benefit payments.

Pension Plan Assets

The assets of the qualified pension plans are held in a master trust in which the qualified pension plans are the only participating plans (the "Master Trust"). The investment policy for the qualified pension plans is to manage the assets of the Master Trust with the objective to provide for pension liabilities to be met, maintaining retirement income security for the participants of the plans and their beneficiaries. The investment portfolio is a mix of pooled funds invested in fixed income securities, equity securities and certain alternative investments with the objective of matching plan liability performance, diversifying risk and achieving a target investment return. Pension assets are managed in a balanced portfolio comprised of two major components: a return-seeking portion and a liability-matching portion.

The Company uses an investment strategy designed to increase the fixed income allocation as the funded status of the qualified pension plans improves. As the qualified pension plans reach set funded status milestones, the assets will be rebalanced to shift more assets from equity to fixed income. Based on the progress with this strategy, the target investment allocation for pension fund assets is permitted to vary within specified ranges subject to Investment Committee approval for return-seeking securities and liability-matching securities. As of December 31, 2022, the target investment allocation for return-seeking securities was 20%-40%, with the remaining in liability-matching securities. The actual investment allocation as of December 31, 2022 was 42.1% return-seeking and 57.9% liability-matching.

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The following tables set forth the investment assets of the qualified pension plans by level within the fair value hierarchy as of December 31, 2022 and 2021:

	December 31, 2022			December 31, 2021		
	Fair Value	Level 1	Level 2	Fair Value	Level 1	Level 2
Cash	\$ 6	\$ 6	\$ —	\$ 2	\$ 2	\$ —
Collective trust funds ^(a)	1,858	—	1,858	2,708	—	2,708
Total investment assets	1,864	\$ 6	\$ 1,858	2,710	\$ 2	\$ 2,708
Accrued investment income and other receivables	42			247		
Accrued liabilities	(25)			(46)		
Investments measured at net asset value ^(b)	702			546		
Fair value of plan assets	<u>\$ 2,583</u>			<u>\$ 3,457</u>		

(a) Collective trust funds consist of bond funds with corporate and U.S. treasury debt securities, equity funds with global equity index, infrastructure and real estate securities and short-term investment strategies comprised of instruments issued or fully guaranteed by the U.S. government and/or its agencies and multi-strategy funds, which are valued using the net assets provided by the administrator of the fund. The value of each fund is based on the readily determinable fair value of the underlying assets owned by the fund, less liabilities, and then divided by the number of units outstanding.

(b) As a practical expedient, certain investment classes which hold securities that are not readily available for redemption and are measured at fair value using the net asset value ("NAV") per share (or its equivalent) have not been classified in the fair value hierarchy. The primary investment classes include alternative, fixed income and real estate funds. Certain investments report NAV per share on a month or quarter lag. There are no material unfunded commitments with respect to these investment classes.

Pension Plan Contributions

The Company made no cash contributions to the qualified pension plans during the years ended December 31, 2022, 2021 and 2020; however, the Company may make discretionary cash contributions to the qualified pension plans in the future. Such contributions will be dependent on a variety of factors, including current and expected interest rates, asset performance, the funded status of the qualified pension plans and management's judgment. For the nonqualified unfunded pension plan, the Company will continue to make contributions during 2023 to the extent benefits are paid.

Benefit payments for the pension plans are expected to be \$191 million in 2023, \$180 million in 2024, \$173 million in 2025, \$167 million in 2026, \$162 million in 2027 and \$746 million in 2028 to 2032.

Defined Contribution Benefit Plans

The Company's employees may participate in the Charter Communications, Inc. 401(k) Savings Plan (the "401(k) Plan"). Employees that qualify for participation can contribute up to 50% of their salary, on a pre-tax basis, subject to a maximum contribution limit as determined by the IRS. The Company's matching contribution is discretionary and is equal to 100% of the amount of the salary reduction the participant elects to defer (up to 6% of the participant's eligible compensation), excluding any catch-up contributions and is paid by the Company on a per pay period basis.

For employees who are not eligible to participate in the Company's long-term incentive plan and who are not covered by a collective bargaining agreement, the Company offers a contribution to the Retirement Accumulation Plan ("RAP"), equal to 3% of eligible pay. The Company made contributions to the 401(k) plan and RAP totaling \$506 million, \$495 million and \$493 million for the years ended December 31, 2022, 2021 and 2020, respectively.

22. Recently Issued Accounting Standards

ASU No. 2021-10, Disclosures by Business Entities about Government Assistance ("ASU 2021-10")

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In November 2021, the FASB issued ASU 2021-10, which requires business entities to disclose information about certain government assistance they receive. Such disclosure requirements include the nature of the transactions and the related accounting policy used, the line items on the balance sheet and income statement that are affected and the amounts applicable to each financial statement line item and significant terms and conditions of the transactions. ASU 2021-10 is effective for annual periods beginning after December 15, 2021 (year ending December 31, 2022 for the Company). The Company adopted ASU 2021-10 for the year ended December 31, 2022 as discussed in Note 2.

23. Parent Company Only Financial Statements

As the result of limitations on, and prohibitions of, distributions, substantially all of the net assets of the consolidated subsidiaries are restricted from distribution to Charter, the parent company. The following condensed parent-only financial statements of Charter account for the investment in Charter Holdco under the equity method of accounting. Comprehensive income equaled net income for the years ended December 31, 2022, 2021 and 2020. The financial statements should be read in conjunction with the consolidated financial statements of the Company and notes thereto.

Charter Communications, Inc. (Parent Company Only)
Condensed Balance Sheets

	December 31,	
	2022	2021
ASSETS		
Accounts receivable, net	\$ —	\$ 1
Receivables from related party	28	33
Prepaid expenses and other current assets	24	24
Investment in subsidiaries	28,729	33,129
Loans receivable - related party	1	284
Total assets	<u>\$ 28,782</u>	<u>\$ 33,471</u>
LIABILITIES AND SHAREHOLDER'S EQUITY		
Current liabilities	\$ 138	\$ 45
Deferred income taxes	18,998	19,020
Loans payable - related party	16	—
Other long-term liabilities	511	356
Shareholder's equity	9,119	14,050
Total liabilities and shareholder's equity	<u>\$ 28,782</u>	<u>\$ 33,471</u>

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Charter Communications, Inc. (Parent Company Only)
Condensed Statements of Operations

	Year Ended December 31,		
	2022	2021	2020
INCOME			
Revenues	\$ 4	\$ 5	\$ 64
Interest income	2	7	12
Equity in income of subsidiaries	6,587	5,632	3,771
Total income	6,593	5,644	3,847
EXPENSES			
Operating costs and expenses	4	5	64
Income before income taxes	6,589	5,639	3,783
Income tax expense	(1,534)	(985)	(561)
Net income	\$ 5,055	\$ 4,654	\$ 3,222

Charter Communications, Inc. (Parent Company Only)
Condensed Statements of Cash Flows

	Year Ended December 31,		
	2022	2021	2020
NET CASH FLOWS FROM OPERATING ACTIVITIES	\$ (1,247)	\$ (84)	\$ (49)
CASH FLOWS FROM INVESTING ACTIVITIES:			
Contribution to subsidiaries	(33)	(44)	(208)
Distributions from subsidiaries	11,246	15,516	11,268
Net cash flows from investing activities	11,213	15,472	11,060
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from exercise of stock options	5	44	184
Issuance of equity	—	—	23
Purchase of treasury stock	(10,277)	(15,431)	(11,217)
Net cash flows from related party loans	306	(1)	(1)
Net cash flows from financing activities	(9,966)	(15,388)	(11,011)
NET INCREASE IN CASH AND CASH EQUIVALENTS	—	—	—
CASH AND CASH EQUIVALENTS, beginning of period	—	—	—
CASH AND CASH EQUIVALENTS, end of period	\$ —	\$ —	\$ —