

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

FORM 10-K

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

For the fiscal year ended December 31, 2020
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 No. 001-7784



Lumen Technologies, Inc.
(Exact name of registrant as specified in its charter)

Louisiana

(State or other jurisdiction of
incorporation or organization)

100 CenturyLink Drive,

Monroe, Louisiana

(Address of principal executive offices)

72-0651161

(I.R.S. Employer
Identification No.)

71203

(Zip Code)

(318) 388-9000

(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
Common Stock, par value \$1.00 per share	LUMN	New York Stock Exchange
Preferred Stock Purchase Rights	N/A	New York Stock Exchange

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 pursuant to Rule 405 of Regulation S-T 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, smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth 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 Exchange Act). Yes ☐ No ☒

On February 23, 2021, 1,096,848,568 shares of common stock were outstanding. The aggregate market value of the voting stock held by non-affiliates as of June 30, 2020 was \$10.9 billion.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the Registrant's Proxy Statement to be furnished in connection with the 2021 annual meeting of shareholders are incorporated by reference in Part III of this report.

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Unless the context requires otherwise, (i) references in this report on Form 10-K, for all periods presented, to "Lumen Technologies, Inc.", "Lumen Technologies" or "Lumen", "we," "us", the "Company" and "our" refer to Lumen Technologies, Inc. and its consolidated subsidiaries and (ii) references in this report to "Level 3" refer to Level 3 Parent, LLC and its predecessor, Level 3 Communications, Inc., which we acquired on November 1, 2017.

PART I

Special Note Regarding Name Change

On September 14, 2020, we commenced operating under the brand name "Lumen" and, on January 22, 2021, we officially changed our legal name from "CenturyLink, Inc." to "Lumen Technologies, Inc."

Special Note Regarding Forward-Looking Statements

This report and other documents filed by us under the federal securities law include, and future oral or written statements or press releases by us and our management may include, forward-looking statements about our business, financial condition, operating results or prospects. These "forward-looking" statements are defined by, and are subject to the "safe harbor" protections under, the federal securities laws. These statements include, among others:

- statements regarding how the health and economic challenges raised by the COVID-19 pandemic may impact our business, operations, cash flows or financial position;
- forecasts of our anticipated future results of operations, cash flows or financial position;
- statements concerning the anticipated impact of our transactions, investments, product development, participation in government programs, and other initiatives, including synergies or costs associated with these initiatives;
- statements about our liquidity, profitability, profit margins, tax position, tax assets, tax rates, asset values, contingent liabilities, growth opportunities, growth rates, acquisition and divestiture opportunities, business prospects, regulatory and competitive outlook, market share, product capabilities, investment and expenditure plans, business strategies, dividend and securities repurchase plans, leverage, capital allocation plans, financing alternatives and sources, and pricing plans; and
- other similar statements of our expectations, beliefs, future plans and strategies, anticipated developments and other matters that are not historical facts, many of which are highlighted by words such as "may," "will," "would," "could," "should," "plan," "believes," "expects," "anticipates," "estimates," "projects," "intends," "likely," "seeks," "hopes," or variations or similar expressions with respect to the future.

These forward-looking statements are based upon our judgment and assumptions as of the date such statements are made concerning future developments and events, many of which are beyond our control. These forward-looking statements, and the assumptions upon which they are based, (i) are not guarantees of future results, (ii) are inherently speculative and (iii) are subject to a number of risks and uncertainties. Actual events and results may differ materially from those anticipated, estimated, projected or implied by us in those statements if one or more of these risks or uncertainties materialize, or if our underlying assumptions prove incorrect. All of our forward-looking statements are qualified in their entirety by reference to our discussion of factors that could cause our actual results to differ materially from those anticipated, estimated, projected or implied by us in those forward-looking statements. Factors that could affect actual results include but are not limited to:

- uncertainties regarding the impact that COVID-19 health and economic disruptions will continue to have on our business, operations, cash flows and corporate initiatives;
- the effects of competition from a wide variety of competitive providers, including decreased demand for our more mature service offerings and increased pricing pressures;
- the effects of new, emerging or competing technologies, including those that could make our products less desirable or obsolete;

- our ability to attain our key operating imperatives, including simplifying and consolidating our network, simplifying and automating our service support systems, strengthening our relationships with customers and attaining projected cost savings;
- our ability to safeguard our network, and to avoid the adverse impact of possible security breaches, service outages, system failures, or similar events impacting our network or the availability and quality of our services;
- the effects of ongoing changes in the regulation of the communications industry, including the outcome of legislative, regulatory or judicial proceedings relating to content liability standards, intercarrier compensation, universal service, service regulation, broadband deployment, data protection, privacy and net neutrality;
- our ability to effectively retain and hire key personnel and to successfully negotiate collective bargaining agreements on reasonable terms without work stoppages;
- possible changes in the demand for our products and services, including increased demand for high-speed data transmission services;
- our ability to successfully maintain the quality and profitability of our existing product and service offerings and to introduce profitable new offerings on a timely and cost-effective basis;
- our ability to generate cash flows sufficient to fund our financial commitments and objectives, including our capital expenditures, operating costs, debt repayments, dividends, pension contributions and other benefits payments;
- our ability to successfully and timely implement our operating plans and corporate strategies, including our deleveraging strategy;
- changes in our operating plans, corporate strategies, dividend payment plans or other capital allocation plans, whether based upon COVID-19 disruptions, changes in our cash flows, cash requirements, financial performance, financial position, market conditions or otherwise;
- the impact of any future material acquisitions or divestitures that we may engage in;
- the negative impact of increases in the costs of our pension, health, post-employment or other benefits, including those caused by changes in markets, interest rates, mortality rates, demographics or regulations;
- the potential negative impact of customer complaints, government investigations, security breaches or service outages impacting us or our industry;
- adverse changes in our access to credit markets on favorable terms, whether caused by changes in our financial position, lower credit ratings, unstable markets or otherwise;
- our ability to meet the terms and conditions of our debt obligations and covenants, including our ability to make transfers of cash in compliance therewith;
- our ability to maintain favorable relations with our security holders, key business partners, suppliers, vendors, landlords and financial institutions;
- our ability to meet evolving environmental, social and governance expectations and benchmarks;
- our ability to collect our receivables from, or continue to do business with, financially-troubled customers, including, but not limited to, those adversely impacted by the economic dislocations caused by the COVID-19 pandemic;
- our ability to use our net operating loss carryforwards in the amounts projected;

- any adverse developments in legal or regulatory proceedings involving us;
- changes in tax, pension, healthcare or other laws or regulations, in governmental support programs, or in general government funding levels, including those arising from pending proposals to increase federal income tax rates;
- the effects of changes in accounting policies, practices or assumptions, including changes that could potentially require additional future impairment charges;
- the effects of adverse weather, terrorism, epidemics, pandemics, rioting, societal unrest, or other natural or man-made disasters or disturbances;
- the potential adverse effects if our internal controls over financial reporting have weaknesses or deficiencies, or otherwise fail to operate as intended;
- the effects of more general factors such as changes in interest rates, in exchange rates, in operating costs, in public policy, in the views of financial analysts, or in general market, labor, economic or geo-political conditions; and
- other risks referenced in the "Risk Factors" section or other portions of this report or other of our filings with the U.S. Securities and Exchange Commission (the "SEC").

Additional factors or risks that we currently deem immaterial, that are not presently known to us or that arise in the future could also cause our actual results to differ materially from our expected results. Given these uncertainties, investors are cautioned not to unduly rely upon our forward-looking statements, which speak only as of the date made. We undertake no obligation to publicly update or revise any forward-looking statements for any reason, whether as a result of new information, future events or developments, changed circumstances, or otherwise. Furthermore, any information about our intentions contained in any of our forward-looking statements reflects our intentions as of the date of such forward-looking statement, and is based upon, among other things, existing regulatory, technological, industry, competitive, economic and market conditions, and our assumptions as of such date. We may change our intentions, strategies or plans (including our dividend or other capital allocation plans) at any time and without notice, based upon any changes in such factors, in our assumptions or otherwise.

ITEM 1. BUSINESS

Changes from Prior Periodic Reports

In this report we have complied with the disclosures required by the Securities and Exchange Commission ("SEC") release No. 33-10825 "Modernization of Regulation S-K Items 101, 103, and 105", and we have early adopted the changes in disclosure standards included in SEC release No. 33-10890 "Management's Discussion and Analysis, Selected Financial Data, Supplementary Financial Information."

Modernization of Regulation S-K Items 101, 103 and 105

Effective as of November 9, 2020, the SEC issued Release No. 33-10825, "Modernization of Regulation S-K Items 101, 103, and 105." This release was adopted to modernize the description of business, legal proceedings, and risk factor disclosures that registrants are required to make pursuant to Regulation S-K. Specifically, this release requires registrants to provide disclosures relating to their human capital resources and to restructure their risk factor disclosures. Additionally, the release increases the threshold for disclosure of environmental proceedings to which the government is a party.

These changes are required for any annual period subsequent to the effective date of November 9, 2020. As such, we have adopted these changes in this report.

Management's Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information

In November 2020, the SEC issued Release No. 33-10890, "Management's Discussion and Analysis, Selected Financial Data, and Supplementary Financial Information" which will become fully effective on August 9, 2021, with voluntary compliance permitted on or after February 10, 2021. This release was adopted to modernize, simplify, and enhance certain financial disclosure requirements in Regulation S-K. Specifically, the SEC eliminated the requirement for selected financial data, only requiring quarterly disclosure when there are retrospective changes affecting comprehensive income, and amending the matters required to be presented under Management's Discussion and Analysis ("MD&A") to, among other things, eliminate the requirement of the contractual obligations table.

With our early adoption of this release, we have eliminated from this document the items discussed above that are no longer required. Information on our contractual obligations is still disclosed in a narrative within the "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Business Overview and Purpose

We are an international facilities-based technology and communications company focused on providing our business and residential customers with a broad array of integrated services and solutions necessary to fully participate in our rapidly evolving digital world, which we believe is undergoing the "Fourth Industrial Revolution" or simply the "4IR". We believe we are the world's most inter-connected network and our platform empowers our customers to rapidly adjust digital programs to meet immediate demands, create efficiencies, accelerate market access, and reduce costs – allowing customers to rapidly evolve their information, communications and technology ("ICT") programs to address dynamic changes without distraction from their core competencies. By empowering our customers to rapidly acquire, analyze and act on data, we are furthering human progress through technology and enabling our customers to thrive in the 4IR. Our specific products and services are detailed below under the heading "Segments and Products & Services."

As part of the recent Lumen rebranding, we refined our marketing approach to better align with our customer base. Lumen is the name of our company and our flagship brand for serving the enterprise and wholesale markets. We also launched our Quantum Fiber brand and reconfirmed the importance of our expansive CenturyLink platform name. Quantum Fiber is our brand for providing fiber-based services to small business and residential customers. Our CenturyLink brand covers our mass-marketed legacy copper-based services, managed for optimal cost and efficiency.

With approximately 450,000 route miles of fiber optic cable globally, we are among the largest providers of communications services to domestic and global enterprise customers. Our terrestrial and subsea fiber optic long-haul network throughout North America, Europe, Latin America and Asia Pacific connects to metropolitan fiber networks that we operate. We provide services in over 60 countries, with most of our revenue being derived in the United States ("U.S."). We believe our secure global platform plays a central role in facilitating communications worldwide.

In the last year, the COVID-19 pandemic forced a seismic shift in how the world communicates with colleagues, family and friends, how children learn and how we conduct business. From multi-national global enterprises to small businesses, our integrated solutions portfolio enables our customers to accelerate digital transformation, improve operational performance and manage risk.

For a discussion of certain risks applicable to our business, see "Risk Factors" in Item 1A of Part I of this report.

Financial Highlights

The following table summarizes the results of our consolidated operations:

	Years Ended December 31,		
	2020 ⁽¹⁾⁽²⁾	2019 ⁽¹⁾⁽²⁾	2018 ⁽¹⁾⁽²⁾⁽³⁾
	(Dollars in millions)		
Operating revenue	\$ 20,712	21,458	22,580
Operating expenses	19,750	24,184	22,010
Operating income (loss)	\$ 962	(2,726)	570
Net loss	\$ (1,232)	(5,269)	(1,733)

- (1) During 2020, 2019 and 2018, we incurred Level 3 integration and transformation expenses of \$375 million, \$234 million and \$393 million, respectively.
- (2) During 2020, 2019 and 2018, we recorded non-cash, non-tax-deductible goodwill impairment charges of \$2.6 billion, \$6.5 billion and \$2.7 billion, respectively. For additional information, see Note 2—Goodwill, Customer Relationships and Other Intangible Assets to our consolidated financial statements in Item 8 of Part II of this report.
- (3) The enactment of the Tax Cuts and Jobs Act in December 2017 resulted in a remeasurement of our deferred tax assets and liabilities at the new federal corporate tax rate of 21%. The remeasurement resulted in tax expense of \$92 million for 2018.

We estimate that during 2020, 2019 and 2018, approximately 8.7%, 8.5% and 8.2%, respectively, of our consolidated revenue was derived from providing telecommunications, colocation and hosting services outside the U.S.

The following table summarizes certain selected financial information from our consolidated balance sheets:

	As of December 31,	
	2020	2019
	(Dollars in millions)	
Total assets	\$ 59,394	64,742
Total long-term debt ⁽¹⁾	31,837	34,694
Total stockholders' equity	11,162	13,470

- (1) For additional information on our total long-term debt, see Note 6—Long-Term Debt and Credit Facilities to our consolidated financial statements in Item 8 of Part II of this report. For information on our total obligations, see "Management's Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Future Contractual Obligations" in Item 7 of Part II of this report.

The summary financial information appearing above should be read in conjunction with, and is qualified by reference to, our consolidated financial statements and notes thereto in Item 8 of Part II of this report and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Strategy

Our business combination with Level 3 was driven in part by a vision to provide enhanced services to our business and residential customers by transforming our infrastructure into an adaptive fiber network delivering high bandwidth and low latency on a secure platform. Over the last three years, we have diligently pursued that vision through a deliberative strategy to attain our goals.

- 2018 – Integration – focused on efficiently combining the two companies into one;
- 2019 – Transformation – focused on improving the customer experience by strengthening our suite of products and services;

- 2020 – Operation – centered on the “Lumen” brand launch, highlighting the Company’s vision for future services;
- 2021 – Platform Expansion and Innovation – build and enhance the capabilities of our platform and use those enhancements to drive profitable growth.

Platform Expansion and Innovation

In September 2020, we launched our “Lumen” brand signaling our heightened focus on delivering digital experiences to our customers designed to drive their success. We believe the 4IR will usher in unprecedented opportunity to leverage digital interactions to enhance business outcomes. The demands brought on by the COVID-19 pandemic underscored the urgency for digital transformation across our customer base, and further highlighted the need for reliable, secure digital services. Our new brand communicates our commitment to support our customers’ needs and reflects a fiber platform that is secure, reliable and fast.

Although our Lumen, Quantum and CenturyLink brands are focused on specific customers and related services, our collective Lumen strategy remains driven by our fundamental objectives of:

- Portfolio Progression – meeting the dynamic needs of our broad range of customers for enhancing productivity
 - Serving the business market at light speed to deliver applications globally, where and how they are needed to meet business outcomes
 - Serving mass market customers with the reliable, secure and high-performance connectivity and the related services they require
 - Enabling all customers – businesses and consumers – access to secure, fast and reliable connectivity required to thrive in the 4IR
- Stakeholder Success and Value Creation – understanding the value and perspective each stakeholder contributes to our overall success; and
- Cost Transformation – diligently pursuing our deleveraging and capital allocation strategies to enhance our return on capital and reward our investors.

We plan to continue to pursue our long-term Lumen vision through disciplined focus on these objectives, which are discussed further below.

Portfolio Progression

Our portfolio progression plans focus on continuing to integrate our global network, cloud, edge, security, voice and collaboration assets and technologies into an advanced, all-in-one delivery architecture. Capability enhancements such as edge computing and software-defined wide area networks (“SD WAN”) are critical to meeting our customers’ needs and drive our growth strategy. Our capabilities are grounded in our extensive global fiber infrastructure and our innovation efforts are centered around accelerating our platform’s capabilities to anticipate and address those needs. We believe our Lumen platform provides the flexibility to create compelling, bespoke network services to enhance the efficiency and utility of our core network services. Our design has the potential to create value for our customers by simplifying application delivery on a high-performance, secure, worldwide digital platform.

The Lumen platform is designed to address each layer of a digital business model through (i) high performance dynamic connections that are interoperable with a range of on-net enterprise locations, multi-tenant data centers and public cloud on-ramps; (ii) hybrid cloud infrastructure integrated with computing and storage options across public cloud, network edge and customer premises, and compatible with a wide range of data centers using different software; and (iii) service orchestration and automation which supports software-defined managed services frameworks capable of deploying workloads to a range of infrastructure venues and network connections. We believe this platform design can help customers, and our Lumen team, control costs by increasing operational efficiencies and driving forward the next generation of our product and services portfolio.

Stakeholder Success and Value Creation

Employees, Customers, Partners and Vendors

We believe realizing the Lumen promise depends on regular, informed communications with our stakeholders, including shareholders, employees, customers, vendors, lenders, partners and our global community. Understanding stakeholder goals and priorities enables strategic decisions focused on building long-term value.

Employees and Human Capital Resources

Lumen's highly competitive business requires attracting, developing and retaining a motivated team inspired by leadership, engaged in meaningful work, motivated by growth opportunities and thriving in a culture that embraces diversity, inclusion and belonging. Understanding and anticipating the priorities of our current and future employees is important to realizing our purpose to "further human progress through technology." At December 31, 2020, we had approximately 39,000 employees world-wide, including approximately 7,000 outside the U.S.

Attracting, Developing and Retaining Talent

Our recruiting, development and retention objectives focus on attracting skilled, engaged employees who contribute the talent and diverse perspectives critical to our innovative, forward-looking and inclusive workforce. Our recruiting process actively sources diverse talent and is designed to eliminate bias, supporting our ability to hire candidates with professional qualifications, personal potential and differing perspectives. Fostering career progression by encouraging regular professional education empowers our employees to pursue their professional goals, which is critical to developing and retaining our employees. We invest in broad-based development for all of our employees in various ways such as skills-building programs, on-demand learning options, tuition reimbursement, tailored mentoring programs and a suite of leadership development courses. In an effort to create more development opportunities for all employees, we are currently expanding our intern, mentoring and leadership development programs, with added focus on development for diverse employees. We gauge progress and efficacy, identify opportunities for change, and pursue solutions through tracking and analyzing data from various sources such as annual talent reviews and our progress toward hiring/promotion goals in our development, diversity and inclusion plans.

Diversity, Inclusion & Belonging

We believe that understanding and respecting another's perspective, experience, background and beliefs provide an opportunity to expand horizons, challenge complacency and foster empathy. For Lumen, diversity of perspective, experience, background and beliefs fuel our innovative, collaborative, and engaged workplace. Realizing greater ethnic, racial and gender diversity across all levels of an organization is, and will continue to be, an ongoing journey. Our Diversity & Inclusion Steering Committee comprised of a cross-functional team of senior executives and led by our Chief Diversity & Inclusion Officer, regularly evaluates and seeks to define our diversity, inclusion and belonging strategy. We aim for the highest standards of fairness and equal opportunity, in recruitment, hiring, promotions, job assignments and compensation (including undertaking periodic gender and race/ethnicity pay equity studies of our U.S., non-represented employees and making pay adjustments when warranted). Inclusive recruiting and outreach programs for diverse candidates, employee resource groups, and management-led listening circles are among some of Lumen's initiatives to create greater diversity and belonging among our employees.

Positive Corporate Culture

Our employees are critical to Lumen's success and we believe creating a positive, inclusive culture is essential to attracting and retaining engaged employees. Lumen's company culture program incorporates a wide variety of communication and training activities encouraging collaboration among our colleagues around the world. We measure the program's efficacy and identify opportunities for improvements through an engagement survey distributed approximately every six months.

Health & Wellness

We believe a healthy, engaged and high performing workforce is part of our competitive advantage. We want all of our employees to thrive, and we regularly re-evaluate how to best support our employees' wellness, health and safety through benefits and resources. Our current benefit and wellness programs drive engagement that positively impacts our culture, job satisfaction, recruiting and retention programs. In response to the COVID-19 pandemic, we expanded our physical, mental, and family health programs and informational outreach. Additional information about our COVID-19 response is located under Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Labor Relations

Approximately 23% of our U.S. workforce is represented by a union, either the Communications Workers of America or the International Brotherhood of Electrical Workers. Employees in four countries in Europe are represented by works councils or a representative body. We recognize the critical role that our supervisors and managers play in fostering a productive and respectful work environment, and we encourage employees to work directly with their supervisors, where possible, to efficiently and effectively resolve workplace concerns. We also respect our employees' rights to voluntarily establish and join unions and similar associations without unlawful interference. We strive to work collaboratively with the unions, councils and associations that represent our workers.

Customer Success

Our customers range from individual households to global enterprises. Whether our network supports remote education or a multi-national work-from-home environment, all customers are impacted by the quality and reliability of our products and services. Understanding how each customer accesses and uses our products and services informs the type of customer engagement to best meet their expectations. Our Customer Success organization includes dedicated teams focused on building deeper relationships and providing us the opportunity to continually improve our customers' Lumen experience, including their interactions with our employees and systems. We believe a strong experience leads to satisfied customers and engaged employees who are encouraged to recommend creative solutions. We have a dedicated team responsible for evaluating the best approach to the customer experience from our largest enterprise customers to our residential customers, coupled with frequent, transparent and informative communication processes.

We value both customer and employee suggestions. We offer our customers several channels for communicating with us, including voice, text, email, chat and social media, among others. We are driving a digital-first culture that allows our customers to configure, order, and rapidly deploy our services through an all-digital, self-service set of tools. In 2019, we launched Lumen's inaugural customer experience (CX) event, during which we invited customers to collaborate directly with us.

While careful listening to customers is the best source of customer experience feedback, we believe overlaying it with employee feedback is the most effective way to continuously improve. We regularly invite our front-line employees to provide feedback on opportunities to improve our capabilities.

Partners and Vendors

Understanding how our customers access and use our products and services is an important element of evaluating which partners and vendors may best contribute to our customers' success. Consequently, understanding the opportunities any future or existing partners or vendors may bring is also an element of customer success. Lumen leverages our relationships and by co-innovating with a comprehensive group of strategic partners to create solutions focused exclusively on our customers' business and IT requirements. Through our open and interoperable approach, we seek to implement the best execution venue available for all our solutions – whether ours or a third party's. When necessary, Lumen incorporates market-leading technologies to optimize application performance and streamline integration throughout the IT stack to ensure seamless integration and interoperability. Lumen has collaborated with a host of technology partners, giving us the capability to tailor and fully manage scalable solutions that customers control, so they can maximize applications. Lumen, by working with our network of technology partners, can integrate different partners and technologies, shifting the IT burden from our customers.

In light of these efforts to better serve our customers, we are materially reliant on a wide range of vendors to support our organization and partners to support our strategy. We work with, and rely on, other communications companies that lease us transmission capacity or sell us various services necessary for our current operations, as well as a wide range of software, hardware and equipment suppliers. We believe that co-innovating with other companies provides the flexibility to rapidly evolve our strategy to effectively support our customers.

Cost Transformation

We believe that diligently pursuing our deleveraging strategy, responsible capital allocation and our ongoing commitment to reinvest the savings in growing our Lumen platform contributes to our long-term goal to create value. Our investments in infrastructure, expanding fiber, and deploying in-building technology are part of our foundation for future growth.

Our Network

Our network, through which we provide most of our products and services consists of fiber-optic and copper cables, high-speed transport equipment, electronics, voice switches, data switches and routers, and various other equipment. We operate part of our network with leased assets, and a substantial portion of our equipment with licensed software.

At December 31, 2020, our network (both owned and leased) included:

- Approximately 450,000 route miles of fiber optic plant globally;
- Approximately 916,000 miles of copper plant;
- Approximately 310 colocation facilities and data centers globally;
- Approximately 37,500 route miles of subsea fiber optic cable systems;
- Approximately 180,000 buildings directly connected to our network, which we refer to as "Fiber On-net" buildings;
- Multiple gateway and transmission facilities used in connection with operating our network throughout North America, Europe and Latin America; and
- Central office and other equipment that enables us to provide telephone service as an incumbent local telephone company ("ILEC") in 37 states.

As noted elsewhere in this report, we view our network as one of our most critical assets. We have devoted, and plan to continue to devote, substantial resources to (i) simplify and modernize our network and legacy systems and (ii) expand our network to address demand for enhanced or new products.

Although we own most of our network, we lease a substantial portion of our core fiber network from several other communication companies under arrangements that will periodically need to be renewed or replaced to support our current network operations.

Like other large communications companies, we are a constant target of cyber-attacks of various degrees, and, from time to time in the ordinary course of our business, we experience disruption in our services.

For additional information regarding our systems, network assets, network risks, capital expenditure requirements and reliance upon third parties, see "Risk Factors" in Item 1A of Part I of this report.

Competition and Market Overview

Organizations across the globe are competing to capitalize on opportunities created by emerging technologies. The need for data-intensive and latency-sensitive emerging technologies continues to grow. Helping businesses address these needs requires a platform that integrates essential technology services such as hybrid networking, connected security services that monitor, prevent and remediate threats, and edge computing services ranging from compute and storage to hosting and collocation services on the cloud edge.

Competition

We compete in a dynamic and highly competitive market, and we expect continued intense competition from a wide variety of sources under these evolving market conditions. In addition to competition from large international communications providers, we are increasingly facing competition from systems integrators, cloud service providers, software companies, infrastructure companies, cable companies, device providers, resellers and smaller niche providers, among others.

Our ability to compete hinges upon effectively enhancing and better integrating our existing products, introducing new products on a timely and cost-effective basis, meeting changing customer needs, providing high-quality information security to build customer confidence and combat cyber-attacks, extending our core technology into new applications and anticipating emerging standards, business models, software delivery methods and other technological changes. Depending on the applicable market and requested services, competition can be intense, especially if competitors in the market have network assets better suited to customer needs, faster transmission speeds or lower prices, or, in certain overseas markets, are national or regional incumbent communications providers that have a longer history of providing service in the market.

For our traditional voice services, providers of wireless voice, social networking and electronic messaging services are significant competitors as many customers are increasingly relying on these providers to communicate, resulting in the long-term systemic decline we have seen in our legacy, traditional voice services. Other potential sources of competition include non-carrier systems that are capable of bypassing our local networks, either partially or completely, through various means. Developments in software have permitted new competitors to offer affordable networking products that historically required more expensive hardware investment. We anticipate that all these trends will continue to place downward pressures on the use of our network.

Additionally, the Telecommunications Act of 1996 obligates the ILECs to permit competitors to interconnect their facilities to the ILEC's network and to take various other steps that are designed to promote competition, including obligations to (i) negotiate interconnection agreements in good faith, (ii) provide nondiscriminatory "unbundled" access to specific portions of the ILEC's network and (iii) permit competitors to physically or virtually collocate their plant on the ILEC's property. As a result of these regulatory, consumer and technological developments, we also face competition from competitive local exchange carriers ("CLECs"), particularly in densely populated areas. CLECs provide competing services through (i) reselling an ILEC's local services, (ii) using an ILEC's unbundled network elements, (iii) operating their own facilities or (iv) a combination thereof.

Competition for higher margin, legacy services remains high. However, our platform expansion and innovation strategy is focused largely on addressing these competitive pressures. As both residential and business customers increasingly demand high-speed connections for entertainment, communications and productivity, we expect the demands on our network will continue to increase over the next several years. To remain competitive and successful, we are continuing to invest in network security, reliability and flexibility and design innovations to deliver competitive services to meet increasing customer bandwidth and speed requirements.

Additional information about competitive pressures is located under the heading "Risk Factors—Business Risks" in Item 1A of Part I of this report.

Market Overview

Understanding and anticipating market trends drives our investment in developing the products and services we believe will be well received by our customers. We expect edge computing services demand to significantly increase over the next several years, serving multiple verticals, including finance, healthcare, retail, manufacturing and other industries. As these use cases continue to emerge, we expect secure network services will increase in importance as consumers require holistic solutions with the flexibility necessary to help accelerate the convergence of computing and communications capabilities with digital content. We believe we have a world-class set of global fiber assets that positions us to deliver a highly-competitive suite of cloud connectivity, low latency edge computing, and integrated network services.

We generally market our business services to members of in-house IT departments or other highly-sophisticated customers with deep technological experience. These individuals typically satisfy their IT requirements by contracting with us or a rapidly evolving group of competitors, or by deploying in-house solutions. We expect our market competition to continue to increase as technology evolves and enables our customers to seek solutions from multiple sources. We compete to provide services to business customers based on a variety of factors, including the comprehensiveness and reliability of our network, our data transmission speeds, price, the latency of our available intercity and metro routes, the scope of our integrated offerings, the reach and peering capacity of our IP network, and customer service.

As noted above, technological and competitive factors have led to new products and services that have reduced the demand for certain of our traditional network services, especially our traditional ILEC services. Also, market demand for our broadband services could be adversely affected by advanced wireless data transmission technologies and other systems delivering generally faster average broadband transmission speeds than ours.

Sales and Marketing

Our enterprise sales and marketing approach revolves around solving complex customer problems with advanced technology and network solutions - striving to make core networks services compatible with digital tools. We also rely on our call center personnel and a variety of channel partners to promote sales of services that meet the needs of our customers. To meet the needs of different customers, our offerings include both stand-alone services and bundled services designed to provide a complete offering of integrated services.

Our sales and marketing approach to our business customers includes a commitment to provide comprehensive communications and IT solutions for business, wholesale and government customers of all sizes, ranging from small business offices to the world's largest global enterprise customers. Our marketing plans include marketing our products and services primarily through direct sales representatives, inbound call centers, telemarketing and third parties, including telecommunications agents, system integrators, value-added resellers and other telecommunications firms. We support our distribution through digital advertising, events, television advertising, website promotions and public relations. We maintain local offices in most major and secondary markets within the U.S. and many of the primary markets of the more than 60 countries in which we provide services.

Similarly, our sales and marketing approach to our mass market customers emphasizes customer-oriented sales, marketing and service with a local presence. Our approach includes marketing our products and services primarily through direct sales representatives, inbound call centers, telemarketing and third parties, including retailers, satellite television providers, door to door sales agents and digital marketing firms.

Segments and Products & Services

On February 10, 2021, we announced plans to adjust our reporting segments and customer-facing sales channels in 2021 to better align with operational changes designed to better support our customers. We believe the changes will provide greater transparency into how we are performing against our strategy, including focusing on growth opportunities and managing declining legacy services. For fiscal year 2020, our products and services were reported by segments as described below.

Segments

In 2020, we reported our financial performance using five segments, as described below:

- *International and Global Accounts Management ("IGAM") Segment* - provided products and services to approximately 200 global enterprise customers and three operating regions: Europe Middle East and Africa, Latin America and Asia Pacific;
- *Enterprise Segment* - provided products and services to large and regional domestic and global enterprises, as well as the public sector, which includes the U.S. federal government, state and local governments and research and education institutions;
- *Small and Medium Business ("SMB") Segment* - provided products and services to small and medium businesses directly and indirectly through our channel partners;
- *Wholesale Segment* - provided products and services to a wide range of other communication providers across the wireline, wireless, cable, voice and data center sectors. Our wholesale customers range from large global telecom providers to small regional providers; and
- *Consumer Segment* - provided products and services to residential customers. Additionally, certain state support payments, Connect America Fund ("CAF") federal support revenue, and other revenue from leasing and subleasing, including 2018 rental income associated with the 2017 failed-sale-leaseback, are reported in our consumer segment as regulatory revenue.

The following table shows the composition of our operating revenue by segment for the years ended December 31, 2020, 2019 and 2018:

	Years Ended December 31,			Percent Change	
	2020	2019	2018	2020 vs 2019	2019 vs 2018
Percentage of revenue:					
International and Global Accounts	16 %	16 %	16 %	— %	— %
Enterprise	29 %	26 %	25 %	3 %	1 %
Small and Medium Business	12 %	13 %	13 %	(1)%	— %
Wholesale	18 %	19 %	19 %	(1)%	— %
Consumer	25 %	26 %	27 %	(1)%	(1)%
Total operating revenue	100 %	100 %	100 %		

For additional information on our segment data, including information on certain centrally-managed assets and expenses not reflected in our segment results, see Note 16—Segment Information to our consolidated financial statements in Item 8 of Part II of this report and "Management's Discussion and Analysis of Financial Condition and Results of Operations—Reporting Segments" in Item 7 of Part II of this report.

Products & Services

At December 31, 2020, we reported our products and services revenue among four categories for our International and Global Accounts Management, Enterprise, Small and Medium Business and Wholesale segments.

IP and Data Services

- *VPN Data Network.* Built on our extensive fiber-optic network, we create private networks tailored to our customers' needs. These technologies enable service providers, enterprises and government entities to streamline multiple networks into a single, cost-effective solution that simplifies the transmission of voice, video, and data over a single secure network;

- *Ethernet*. We deliver a robust array of networking services built on Ethernet technology. Ethernet services include point-to-point and multi-point equipment configurations that facilitate data transmissions across metropolitan areas and larger enterprise-class wide area networks. Our Ethernet technology is also used by wireless service providers for data transmission via our fiber-optic cables connected to their towers;
- *Internet Protocol ("IP")*. Our IP services provide global internet access over a high performance, diverse network with connectivity in more than 60 countries. Our network spans approximately 450,000 route miles globally with extensive off-net access solutions across North America, Europe, Latin America and Asia Pacific; and
- *Content Delivery*. Our content delivery services provide our customers with the ability to meet their streaming video and far-reaching digital content distribution needs through our Content Delivery Network ("CDN") services and our Vyvx Broadcast Solutions.

Transport and Infrastructure

- *Wavelength*. We deliver high bandwidth optical networks to firms requiring an end-to-end transport solution with Ethernet technology by contracting for a scalable amount of bandwidth connecting sites or providing high-speed access to cloud computing resources;
- *Dark Fiber*. We possess an extensive array of unlit optical fiber, known as "dark fiber." Many large enterprises are interested in building their networks with this high-bandwidth, highly secure optical technology. Lumen Technologies provides professional services to engineer these networks, and in some cases, manage them for customers;
- *Private Line*. We deliver private line services, a direct circuit or channel specifically dedicated for connecting two or more organizational sites. Private line service offers a high-speed, secure solution for frequent transmission of large amounts of data between sites, including wireless backhaul transmissions;
- *Colocation and Data Center Services*. We provide different options for organizations' data center needs. Our data center services range from dedicated hosting and cloud services to more complex managed solutions, including disaster recovery, business continuity, applications management support and security services to manage mission critical applications; and
- *Professional Services*. Our experts deliver a robust array of consulting services to organizations either as part of a larger engagement or as stand-alone services. This category includes network management, installation and maintenance of data equipment and the building of proprietary fiber-optic broadband networks for government and business customers.

Voice and Collaboration

- *Voice*. We offer our customers a complete portfolio of traditional Time Division Multiplexing ("TDM") voice services including Primary Rate Interface service, local inbound service, switched one-plus, toll free, long distance and international services; and
- *Voice Over Internet Protocol ("VoIP")*. We deliver a broad range of local and enterprise voice and data services built on VoIP (Voice over Internet Protocol) technology, including VoIP enhanced local service, national and multinational SIP Trunking, Hosted VoIP, support of Primary Rate Interface service, long distance service and toll-free service.

IT and Managed Services

- We craft technology solutions for our customers and often manage those solutions on an ongoing basis. Managed services represent a blend of network, hosting, cloud (public and private), and IT services that typically require ongoing support such as managing applications, operating systems and hardware. This product line includes intuitive management tools that optimize efficiencies in companies' technology infrastructure. These services frequently enhance equipment or networks owned, acquired or controlled by the customer and often include our consulting or software development.

At December 31, 2020, we reported our products and services revenue among the following four categories for the Consumer segment:

- *Broadband*, which includes high speed, fiber-based and lower speed DSL broadband services;
- *Voice*, which include local and long-distance services;
- *Regulatory Revenue*, which consist of (i) CAF and other support payments designed to reimburse us for various costs related to certain telecommunications services and (ii) other operating revenue from the leasing and subleasing of space; and
- *Other*, which include retail video services (including our linear TV services), professional services and other ancillary services.

Research, Development & Intellectual Property

Due to the dynamic nature of our industry, we prioritize investing in developing new products, improving existing products and licensing third party intellectual property rights to anticipate and meet our customers' evolving needs. As of December 31, 2020, we had approximately 2,700 patents and patent applications in the U.S. and other countries. We have also received licenses to use patents held by others. Patent licenses give us the freedom to operate our business without the risk of interruption from the holder of the patented technology. We plan to continue to file new patent applications as we enhance and develop products and services, and we plan to continue to seek opportunities to expand our patent portfolio through strategic acquisitions and licensing.

In addition to our patent rights, we have rights in various trade names, trademarks, copyrights and other intellectual property that we use to conduct our business. Our services often use the intellectual property of others, including licensed software. We also occasionally license our intellectual property to others as we deem appropriate.

For information on various litigation risks associated with owning and using intellectual property rights, see "Risk Factors—Business Risks" in Item 1A of Part I of this report, and Note 17—Commitments, Contingencies and Other Items to our consolidated financial statements in Item 8 of Part II of this report.

Regulations

Our domestic operations are regulated by the Federal Communications Commission (the "FCC"), by various state utility commissions and occasionally by local agencies. Our non-domestic operations are regulated by supranational groups (such as the European Union, or EU), national agencies and frequently state, provincial or local bodies. Generally, we must obtain and maintain operating licenses from these bodies in most areas where we offer regulated services. For information on the risks associated with the regulations discussed below, see "Risk Factors—Risks Relating to Legal and Regulatory Matters" in Item 1A of Part I of this report.

Changes in the composition and leadership of the FCC, state commissions and other agencies that regulate our business could have significant impacts on our revenue, expenses, competitive position and prospects. Changes in the composition and leadership of these agencies are often difficult to predict, which makes future planning more difficult. The following description discusses some of the major regulations affecting our operations, but others could have a substantial impact on us as well. For additional information, see "Risk Factors" in Item 1A of Part I of this report.

Federal Regulation of Domestic Operations

General

The FCC regulates the interstate services we provide, including the business data service charges we bill for wholesale network transmission and intercarrier compensation, including the interstate access charges that we bill other communications companies in connection with the origination and termination of interstate phone calls. Additionally, the FCC regulates several aspects of our business related to international communications services, privacy, public safety and network infrastructure, including our access to and use of local telephone numbers and our provision of emergency 911 services.

Many of the FCC's regulations adopted in recent years remain subject to judicial review and additional rulemakings, thus increasing the difficulty of determining the ultimate impact of these changes on us and our competitors.

Universal Service

In 2015, we accepted Connect America Fund or "CAF" funding from the FCC of approximately \$500 million per year for six years to fund the deployment of voice and broadband capable infrastructure for approximately 1.2 million rural households and businesses in 33 of the 37 states in which we are an ILEC under the CAF Phase II high-cost support program. As a result of accepting CAF Phase II support payments for 33 states, as well as existing merger-related commitments, we are obligated to make substantial capital expenditures to build infrastructure by certain specified milestone deadlines. In accordance with the FCC's January 2020 order, we elected to receive an additional year of CAF Phase II funding in 2021.

In early 2020, the FCC created the Rural Digital Opportunity Fund (the "RDOF"), which is a new federal support program designed to replace the CAF Phase II program. On December 7, 2020, the FCC allocated in its RDOF Phase I auction \$9.2 billion in support payments over 10 years to deploy high speed broadband to over 5.2 million unserved locations. We won bids for RDOF Phase I support payments of \$26 million annually. These RDOF Phase I support payments are expected to begin January 1, 2022.

For additional information about the potential financial impact of the CAF Phase II program, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Broadband Regulation

In February 2015, the FCC adopted an order classifying Broadband Internet Access Services ("BIAS") under Title II of the Communications Act of 1934 and applying new regulations. In December 2017, the FCC voted to repeal most of those regulations and the classification of BIAS as a Title II service to preempt states from imposing substantial regulations on broadband. Opponents of this change appealed this action in federal court. Several states have also opposed the change and have initiated state executive orders or introduced legislation focused on state-specific Internet service regulation. In October 2019, the federal court upheld the FCC's classification decision but vacated a part of its preemption ruling. The court also requested the FCC to make further findings relating to its classification decision. Numerous parties have appealed this decision, which remain pending. In addition, members of the Biden Administration and various consumer interest groups have advocated in favor of reclassifying BIAS under Title II. The ultimate impact of these pending judicial appeals and calls for additional regulation are currently unknown to us, although the imposition of heightened regulation of our Internet operations could potentially hamper our ability to operate our data networks efficiently, restrict our ability to implement network management practices necessary to ensure quality service, increase the cost of operating, maintaining and upgrading our network and otherwise negatively impact our current operations.

State Regulation of Domestic Operations

In recent years, most states have reduced their regulation of ILECs, including ours. Nonetheless, state regulatory commissions generally continue to (i) set the rates that telecommunication companies charge each other for exchanging traffic, (ii) administer support programs designed to subsidize the provision of services to high-cost rural areas, (iii) regulate the purchase and sale of ILECs, (iv) require ILECs to provide service under publicly-filed tariffs setting forth the terms, conditions and prices of regulated services, (v) limit ILECs' ability to borrow and pledge their assets, (vi) regulate transactions between ILECs and their affiliates and (vii) impose various other service standards. In most states, switched and business data services and interconnection services are subject to price regulation, although the extent of regulation varies by type of service and geographic region.

Data Privacy Regulations

Various foreign, federal and state laws govern our storage, maintenance and use of customer data, including a wide range of consumer protection, data protection, privacy, intellectual property and similar laws. Data privacy regulations are complex and vary across jurisdictions. As a global company, we must comply with various jurisdictional data privacy regulations, including the General Data Protection Regulation ("GDPR") in the EU and

similar laws adopted by various other jurisdictions in certain of our domestic and overseas markets. The application, interpretation and enforcement of these laws are often uncertain, and may be interpreted and applied inconsistently from jurisdiction to jurisdiction. These regulations require careful handling of personal and customer data. We have data handling policies and practices to comply with global data privacy requirements, including GDPR and similar regulations, and have resources dedicated to complying with changing data privacy regulations.

Anti-Bribery and Corruption Regulations

As a global company we must comply with complex foreign and U.S. laws and regulations governing business ethics and practices, such as the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and other local laws prohibiting corrupt payments to governmental officials and anti-competition regulations. We have compliance policies, programs and training to prevent non-compliance with such anti-corruption regulations in the U.S. and other jurisdictions. We monitor pending and proposed legislation and regulatory changes that may impact our business and develop strategies to address the changes and incorporate them into existing compliance programs.

International Regulations

Our subsidiaries operating outside of the U.S. are subject to various regulations in the markets where service is provided. The scope of regulation varies from country to country. The communications regulatory regimes in certain of our non-domestic markets are in the process of development. Many issues, including the pricing of services, have not been addressed fully, or even at all.

The United Kingdom ("UK") recently terminated its membership in the EU ("Brexit"), subject to the negotiation of additional separation agreements with the EU regarding data sharing, financial services and other matters. Several factors which are currently unknown will influence Brexit's ultimate impact on our business. We operate a staging facility in the UK, where certain core network elements and customer premises equipment is configured before being shipped to both UK and EU locations. The UK is currently also a central repository of our spare parts for use in our European operations. However, we have also established a third party sparing facility in Amsterdam which we believe will help mitigate potential disruptions resulting from any impediments to the free movement of goods between the EU and the UK. Given the small percentage of our global personnel that are UK or EU nationals, we do not anticipate any adverse impact from Brexit on our workforce. We are currently monitoring Brexit developments, reviewing our supply chain alternatives, and assessing the short and long-term implications of Brexit on our operations. Nonetheless, based on current information, we do not anticipate Brexit will have a substantial impact on our business.

Our overseas operations are subject to various U.S. export and sanctions laws and regulations. Our deconsolidated Venezuelan affiliate conducts operations in Venezuela, which is currently subject to certain U.S. sanctions.

Other Regulations

Our networks and properties are subject to numerous federal, state and local regulations, including environmental compliance and remediation expenses. We are also subject to codes that regulate our trenching and construction operations or that require us to obtain permits, licenses or franchises to operate. Such regulations are enacted by municipalities, counties, state, federal or other regional governmental bodies, and can vary widely from jurisdiction to jurisdiction as a result. Such regulations may also require us to pay substantial fees.

Acquisitions and Dispositions

Since being incorporated in 1968, we have grown principally through acquisitions. By 2008, we had become one of the largest providers of rural telephone services in the United States. Since then, we acquired Embarq Corporation in mid-2009, Qwest Communications International Inc. in early 2011 and Level 3 Communications, Inc. in late 2017. These acquisitions have substantially changed our customer base, geographic footprint, business strategies and mix of products and services.

We regularly evaluate the possibility of acquiring additional assets or disposing of assets in exchange for cash, securities or other properties, and at any given time may be engaged in discussions or negotiations regarding additional acquisitions or dispositions. We generally do not announce our acquisitions or dispositions until we have entered into a preliminary or definitive agreement.

See Note 2—Goodwill, Customer Relationships and Other Intangible Assets to our consolidated financial statements in Item 8 of Part II of this report for additional information on these acquisitions.

Seasonality

Overall, our business is not materially impacted by seasonality. Our network-related operating expenses are, however, generally higher in the second and third quarters of the year. From time to time, weather related problems have resulted in increased costs to repair our network and respond to service calls in some of our markets. The amount and timing of these costs are subject to the weather patterns of any given year, but have generally been highest during the third quarter and have been related to damage from severe storms, including hurricanes, tropical storms and tornadoes in our markets along the Atlantic and Gulf of Mexico coastlines.

Additional Information

From time to time, we may make investments in other communications or technology companies. For further information on regulatory, technological and competitive factors that could impact our revenue, see "Regulation" under this Item 1, above, and "Competition" under this Item 1, above, and "Risk Factors" under Item 1A, below. For more information on the financial contributions of our various services, see "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 of Part II of this report.

Website Access and Important Investor Information

We were incorporated in Louisiana in 1968. Our website is www.lumen.com. We routinely post important investor information in the "Investor Relations" section of our website at ir.lumen.com. The information contained on, or that may be accessed through, our website is not part of this report or any other periodic reports that we file with the SEC. You may obtain free electronic copies of annual reports on Form 10-K, quarterly reports on Form 10-Q, and current reports on Form 8-K of us and two of our principal subsidiaries, and amendments to those reports, in the "Investor Relations" section of our website (ir.lumen.com) under the heading "FINANCIALS" and subheading "SEC Filings." These reports are also available on the SEC's website at www.sec.gov. From time to time, we also use our website to webcast our earnings calls and certain of our meetings with investors or other members of the investment community.

We have adopted a written code of conduct that serves as the code of ethics applicable to our directors, officers and employees, in accordance with applicable laws and rules promulgated by the SEC and the New York Stock Exchange. In the event that we make any changes (other than by a technical, administrative or non-substantive amendment) to, or provide any waivers from, the provisions of our code of conduct applicable to our directors or executive officers, we intend to disclose these events on our website or in a report on Form 8-K filed with the SEC. The code of conduct, as well as copies of our guidelines on significant governance issues and the charters of our key board committees, are also available in the "Governance" section of our website at www.lumen.com/en-us/about/governance or in print to any shareholder who requests them by sending a written request to our Corporate Secretary at Lumen Technologies, Inc., 100 CenturyLink Drive, Monroe, Louisiana, 71203.

In connection with filing this report, our chief executive officer and chief financial officer made the certifications regarding our financial disclosures required under the Sarbanes-Oxley Act of 2002, and its related regulations. In addition, during 2020, our chief executive officer certified to the New York Stock Exchange that he was unaware of any violations by us of the New York Stock Exchange's corporate governance listing standards.

As a large complex organization, we are from time to time subject to litigation, disputes, governmental or internal investigations, consent decrees, service outages, security breaches or other adverse events. We typically publicly disclose these occurrences (and their ultimate outcomes) only when we determine these disclosures to be material to investors or otherwise required by applicable law.

We typically disclose material non-public information by disseminating press releases, making public filings with the SEC, or disclosing information during publicly accessible meetings or conference calls. Nonetheless, from time to time we have used, and intend to continue to use, our website and social media accounts to augment our disclosures.

Investors should also be aware that while we do, at various times, answer questions raised by securities analysts, it is against our policy to disclose to them selectively any material non-public information or other confidential information. Accordingly, investors should not assume that we agree with any statement or report issued by an analyst with respect to our past or projected performance. To the extent that reports issued by securities analysts contain any projections, forecasts or opinions, such reports are not our responsibility.

Unless otherwise indicated, information contained in this report and other documents filed by us under the federal securities laws concerning our views and expectations regarding the technology or communications industries are based on estimates made by us using data from industry sources, and on assumptions made by us based on our management's knowledge and experience in the markets in which we operate and our industry generally. You should be aware that we have not independently verified data from industry or other third-party sources and cannot guarantee its accuracy or completeness.

Our principal executive offices and telephone number are listed on the cover page of this report.

ITEM 1A. RISK FACTORS

The following discussion identifies material factors that could (i) materially and adversely affect our business, financial condition, results of operations or prospects or (ii) cause our actual results to differ materially from our anticipated results, projections or other expectations. The following information should be read in conjunction with the other portions of this report, including "Special Note Regarding Forward-Looking Statements", "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 and our consolidated financial statements and related notes in Item 8. All references to "Notes" in this Item 1A of Part I refer to the Notes to Consolidated Financial Statements included in Item 8 of Part II of this annual report. Please note the following discussion is not intended to comprehensively list all risks or uncertainties faced by us. Our operations or actual results could also be similarly impacted by additional risks and uncertainties that are not currently known to us, that we currently deem to be immaterial, that arise in the future or that are not specific to us. In addition, certain of the risks described below apply only to a part or segment of our business.

Business Risks

We may not be able to create the global digital experience expected by customers.

Our customers expect us to create and maintain a global digital experience, including: (i) automation and simplification of our offerings, (ii) customer self-service options, (iii) innovative solutions, and (iv) digital access to our products, services and customer support. To do so, we must complete the digital transformation of our operations that is currently underway. Effective digital transformation is a complex, dynamic process requiring efficient allocation and prioritization of resources, simplification of our product portfolio, faster product deployments, retirement of obsolete systems, migration of data and corresponding workforce and system development. We cannot assure you we will be able to effect the successful digital transformation necessary to develop or deliver a global digital experience expected by our customers. If we are unable to do so, we could lose customers to our competitors or fail to attract new customers.

Challenges with integrating or modernizing our existing applications and systems could harm our performance.

To succeed, we need to integrate, upgrade and evolve our existing applications and systems, including many legacy systems from past acquisitions. We cannot assure you we will be able to integrate our legacy IT systems, modernize our infrastructure or deploy a master data management platform. These modernization efforts will require efficient allocation of resources, development capacity, access to subject-matter experts, development of a sustainable operating model and successful collaboration between legal, privacy and security personnel. Any failure or delay in accomplishing these initiatives may negatively affect our (i) customer and employee experiences, (ii) ability to meet regulatory, legal or contractual obligations, (iii) network stability, (iv) ability to realize anticipated efficiencies or (v) ability to deliver value to our customers at required speed and scale.

We operate in an intensely competitive industry and existing and future competitive pressures could harm our performance.

Each of our business and consumer offerings faces increasingly intense competition from a wide variety of sources under evolving market conditions. Some of our current and potential competitors: (i) offer products or services that are substitutes for our traditional wireline voice services, including wireless voice and non-voice communication services, (ii) offer a more comprehensive range of communications products and services, (iii) have greater marketing, engineering, research, development, technical, provisioning, customer relations, financial or other resources, (iv) conduct operations or raise capital at a lower cost than we do, (v) are subject to less regulation than we are, (vi) have stronger brand names, (vii) have deeper or more long-standing relationships with key customers, or (viii) have larger operations than ours, any of which may enable them to compete more successfully for customers, strategic partners and acquisitions. Competitive pressures have lowered market prices for many of our products and services in recent years and continued competitive pressures will likely place further downward pressure on market pricing.

Our ability to successfully compete could be hampered if we fail to develop and market innovative technology solutions.

The technology and communications industry has been and continues to be impacted by significant technological changes, which are enabling an increasing variety of companies to compete with us. Many of these technological changes are (i) displacing or reducing demand for certain of our services, (ii) enabling the development of competitive products or services, (iii) enabling customers to reduce or bypass use of our networks or (iv) reducing profit margins. For example, as service providers continue to invest in 5G networks and services, their 5G services could reduce demand for our network services. Increasingly, customers are demanding more technologically advanced products that suit their evolving needs. To remain competitive, we will need to accurately predict, invest in and respond to changes in technology. Also, we will need to continue developing products and services attractive to our customers. Our ability to do so could be restricted by various factors, including limitations of our existing network, technology, capital or personnel. If we fail at that, our competitors will likely provide our customers with more desirable products and services.

We may be unable to attract, develop and retain leaders and employees with the right skillsets and technical expertise.

We may be unable to attract and retain skilled and motivated leaders and employees who possess the right skillsets and technical, managerial and development expertise to execute on our plans for transformation, innovation and strategic growth. We operate in a highly competitive and expanding industry. We operate with a limited pool of employees and there is competition for highly qualified personnel in certain growth markets. There is no assurance our efforts to recruit and retain qualified personnel will be successful. If we are unable to do so, such failure could have a material adverse effect on our operations and financial condition.

We could be harmed by cyber-attacks.

Our vulnerability to cyber-attacks is heightened by our (i) material reliance on our networks to conduct our operations, (ii) our transmission of large amounts of data over our systems and (iii) our processing and storage of sensitive customer data.

Cyber-attacks on our systems may stem from a variety of sources, including fraud, malice or sabotage on the part of foreign nations, third parties, vendors, or employees and attempts by outside parties to gain access to sensitive data that is stored in or transmitted across our network. Cyber-attacks can put at risk personally identifiable customer data or protected health information, thereby implicating stringent domestic and foreign data protection laws. These threats may also arise from failure or breaches of systems owned, operated or controlled by other unaffiliated operators to the extent we rely on such other systems to deliver services to our customers or to operate our business. Various other factors could intensify these risks, including, (i) our maintenance of information in digital form stored on servers connected to the Internet, (ii) our use of open and software-defined networks, (iii) the complexity of our multi-continent network composed of legacy and acquired properties, (iv) growth in the size and sophistication of our customers and their service requirements, and (v) increased use of our network due to greater demand for data services.

Like other prominent technology and communications companies, we and our customers are constant targets of cyber-attacks of various kinds. Although some of these attacks have resulted in security breaches, thus far none of these breaches has resulted in a material adverse effect on our operating results or financial condition. You should be aware, however, that the risk of breaches is likely to continue to increase due to several factors, including

the increasing sophistication of cyber-attacks and the wider accessibility of cyber-attack tools. You should be further aware that defenses against cyber-attacks currently available to U.S. companies are unlikely to prevent intrusions by a highly-determined, highly-sophisticated hacker. Consequently, you should assume we will be unable to implement security barriers or other preventative measures that repel all future cyber-attacks.

Although we maintain insurance coverage that may, subject to policy terms and conditions (including self-insured deductibles, coverage restrictions and monetary coverage caps), cover certain aspects of our cyber risks, such insurance coverage may be unavailable or insufficient to cover our losses.

Cyber-attacks could (i) disrupt the proper functioning of our networks and systems, which could in turn disrupt the operations of our customers, (ii) result in the destruction, loss, theft, misappropriation or release of proprietary, confidential, sensitive, classified or otherwise valuable information of ours, our customers or our customers' end users, (iii) require us to notify customers, regulatory agencies or the public of data breaches, (iv) require us to provide credits for future service to our customers or to offer expensive incentives to retain customers; (v) subject us to claims by our customers or regulators for damages, fines, penalties, license or permit revocations or other remedies, (vi) damage our reputation or result in a loss of business, (vii) result in the loss of industry certifications or (viii) require significant management attention or financial resources to remedy the resulting damages or to change our systems. Any or all of the foregoing developments could materially adversely impact us.

We could be harmed by outages in our network or various platforms, or other failures of our services.

We are also vulnerable to outages in our network, hosting, cloud or IT platforms, as well as failures of our products or services (including basic and enhanced 911 emergency services) to perform in the manner anticipated. These outages or other failures could result in several of the same adverse effects listed above for cyber-attacks, including the loss of customers, the issuance of credits or refunds, and regulatory fines. This vulnerability may be increased by several factors, including aging network elements, human error, vulnerabilities in our vendors or supply chain, aberrant employees and hardware and software limitations. From time to time in the ordinary course of our business we experience disruptions in our service. We could experience more significant disruptions in the future. Such disruptions could have a negative impact on our business, results of operations, financial condition and cash flows.

Several of our services continue to experience declining revenue, and our efforts to offset these declines may not be successful.

Primarily as a result of the competitive and technological changes discussed above, we have experienced a prolonged systemic decline in our local voice, long-distance voice, network access and private line revenues. Consequently, we have experienced declining consolidated revenues (excluding acquisitions) for a prolonged period and have not been able to realize cost savings sufficient to fully offset the decline. More recently, we have experienced declines in revenue derived from a broader array of our products and services. We have thus far been unable to reverse our annual revenue losses (excluding acquisitions). In addition, most of our more recent product and service offerings generate lower profit margins and may have shorter lifespans than our traditional communication services, and some can be expected to experience slowing or no growth in the future. Accordingly, we may not be successful in attaining our goal of achieving future revenue growth.

Our operations, financial performance and liquidity are materially reliant on key suppliers, vendors and other third parties.

Our ability to conduct our operations could be materially adversely affected if certain of our arrangements with third parties were terminated, including those further described below.

Reliance on other communications providers. To offer certain services in certain of our markets, we must either purchase services or lease network capacity from, or interconnect our network with, the infrastructure of other communications carriers or cloud companies who typically compete against us in those markets. Our reliance on these supply or interconnection arrangements limits our control over the quality of our services. In addition, we are exposed to the risk that other carriers may be unwilling or unable to continue or renew these arrangements in the future. Those risks are heightened when the other carrier is a competitor who may benefit from terminating the agreement or imposing price increases. Additionally, certain of our operations carry a significant amount of voice or data traffic for other communications providers. Their reliance on our services exposes us to the risk that they may

transfer all or a portion of this traffic from our network to alternative networks owned or leased by them, thereby reducing our revenue.

Reliance on key suppliers and vendors. We depend on a limited number of suppliers and vendors for equipment and services relating to our network infrastructure, including fiber optic cable, software, optronics, transmission electronics, digital switches and related components. We also rely on software and service vendors or other parties to assist us with operating, maintaining and administering our business, including billing, security, provisioning and general operations. If any of these vendors experience interruptions, security breaches or other problems delivering their products or services on a timely basis, our operations could suffer significantly. To the extent that proprietary technology of a supplier is an integral component of our network, we may have limited flexibility to purchase key network components from alternative suppliers.

Reliance on key customer contracts. We have several complex high-value national and global customer contracts. These contracts are frequently impacted by a variety of factors that could reduce or eliminate the profitability of these contracts. Moreover, we would be adversely impacted if we fail to renew major contracts upon their expiration.

Reliance on landowners. We rely on rights-of-way, colocation agreements, franchises and other authorizations granted by governmental bodies, railway companies, utilities, carriers and other third parties to locate a portion of our network equipment over, on or under their respective properties. A significant number of these authorizations are scheduled to lapse over the next five to ten years, unless we are able to extend or renew them. Further, some of our operations are subject to licensing and franchising requirements imposed by municipalities or other governmental authorities. Our operations could be adversely affected if any of these authorizations are cancelled, or otherwise terminate or lapse, or if the landowner requests price increases. We cannot assure you we will be able to successfully extend these arrangements when their terms expire, or to enter into new arrangements that may be necessary to implement our network expansion opportunities.

We face risks from natural disasters and extreme weather, which can disrupt our operations and cause us to incur substantial additional capital and operating costs.

A substantial number of our domestic facilities are located in coastal states, which subjects them to the risks associated with severe tropical storms, hurricanes and tornadoes, and many other of our facilities are subject to the risk of earthquakes, floods, fires, tornadoes or other similar casualty events. These events could cause substantial damages, including downed transmission lines, flooded facilities, power outages, fuel shortages, network congestion, delay or failure, damaged or destroyed property and equipment, and work interruptions. Due to substantial deductibles, coverage limits and exclusions, and limited availability, we have typically recovered only a portion of our losses through insurance. Moreover, many climate experts predict an increase in extreme weather events in the future, which would increase our exposure to such risks. For all these reasons, any future hazard-related costs and interruptions could adversely affect our operations and our financial condition.

Any additional future acquisitions or strategic investments may not be available on attractive terms and would subject us to additional risks.

Much of our past growth is attributable to acquisitions. In an effort to implement our business strategies, we may from time to time in the future attempt to pursue other acquisition or expansion opportunities, including strategic investments. To the extent we can identify attractive opportunities, these transactions could involve acquisitions of entire businesses or investments in start-up or established companies and could take several forms. These types of transactions may present significant risks and uncertainties, including the difficulty of identifying appropriate companies to acquire or invest in on acceptable terms, potential violations of covenants in our debt instruments, insufficient revenue acquired to offset liabilities assumed, unexpected expenses, inadequate return of capital, regulatory or compliance issues, potential infringements, difficulties integrating the new properties into our operations, and other unidentified issues not discovered in due diligence. In addition, the financing of any future acquisition completed by us could adversely impact our capital structure. Except as required by law or applicable securities exchange listing standards, we do not expect to ask our shareholders to vote on any proposed acquisition.

Asset dispositions could have a detrimental impact on us or the holders of our securities.

In the past, we have disposed of assets or asset groups for a variety of reasons, and we may consider disposing of other assets or asset groups from time to time in the future. If we agree to proceed with any such divestitures of assets, we may experience operational difficulties segregating them from our retained assets and operations, which could result in disruptions to our operations or claims for damages, among other things. Moreover, such dispositions could reduce our cash flows available to support our payment of dividends, capital expenditures, pension contributions, debt maturities or other commitments.

An outbreak of disease or similar public health threat, such as the recent COVID-19 pandemic, could have a material adverse impact on us.

An outbreak of disease or similar public health threat, such as the recent COVID-19 pandemic and its detrimental impact on the worldwide economy, could have a material adverse impact on our operating results and financial condition. COVID-19 poses the risk that we or our employees, contractors, suppliers, customers and other business partners may be prevented from conducting business activities at expected levels through established processes for an indefinite period of time. Future events regarding the pandemic, which are unpredictable and beyond our control, will likely continue impacting our operations and results by its effects on demand for our products and services and network usage, on our customers' ability to continue to pay us in a timely manner, on other third parties we rely on, on our workforce, on our performance under our contracts, and on our supply chains or distribution channels for our products and services. If the pandemic intensifies or economic conditions further deteriorate, the pandemic's adverse impact on us could become pronounced in the future and could have a material adverse impact on our operating results and financial condition.

Moreover, to the extent any of these risks and uncertainties adversely impact us, they may also have the effect of heightening many of the other risks described in this section "Item 1A. Risk Factors."

We have taken certain precautions due to the uncertain and evolving situation relating to the spread of COVID-19 that could have a material adverse impact on us.

The precautionary measures described in this annual report we have taken to safeguard our employees and customers could make it more difficult to (i) timely and efficiently furnish products and services to our customers, (ii) devote sufficient resources to our ongoing network and product simplification projects, (iii) efficiently monitor and maintain our network, (iv) maintain effective internal controls, (v) mitigate information technology or cybersecurity related risks, and (vi) otherwise operate and administer our affairs. As such, these measures ultimately could have a material adverse impact on our operating results and financial condition.

We face other business risks.

We face other business risks, including among others:

- the risk that customer complaints, governmental investigations or other adverse publicity will adversely impact our brand and our business; and
- the difficulties of managing and administering an organization that offers a complex set of products to a diverse range of customers across several continents.

Legal and Regulatory Risks

We are subject to an extensive, evolving regulatory framework that could create operational or compliance costs.

As explained in greater detail elsewhere in this annual report, (i) our domestic operations are regulated by the FCC and other federal, state and local agencies and (ii) our international operations are regulated by a wide range of various foreign and international bodies. We cannot assure you we will be successful in obtaining or retaining all regulatory licenses necessary to carry out our business in our various markets. Even if we are, the prescribed service standards and conditions imposed on us under these licenses and related data storage, communication and transfer laws may increase our costs, limit our operational flexibility or result in third-party claims.

We are subject to numerous requirements and interpretations under various international, federal, state and local laws, rules and regulations, which are often quite detailed and occasionally in conflict with each other. Accordingly, we cannot ensure we will always be considered to be in compliance with all these requirements at any single point in time.

Various governmental agencies, including state attorneys general with jurisdiction over our operations, have routinely in the past investigated our business practices either in response to customer complaints or on their own initiative, and are expected to continue to do the same in the future. Certain of these investigations have resulted in substantial fines in the past. On occasion, we have resolved such matters by entering into consent decrees, which are court orders that frequently bind us to specific conduct going forward. These consent decrees expose us not only to contractual remedies, but also to judicial enforcement via contempt of court proceedings, any of which could have material adverse consequences. Additionally, future investigations can potentially result in enforcement actions, litigation, fines, settlements or reputational harm, or could cause us to change our sales practices or operations.

Our participation in the FCC's CAF Phase II and RDOF programs subjects us to certain financial risks. If we are not in compliance with FCC measures by the end of the CAF Phase II and RDOF programs, we could incur substantial penalties.

We provide products or services to various federal, state and local agencies. Our failure to comply with complex governmental regulations and laws applicable to these programs, or the terms of our governmental contracts, could result in us suffering substantial negative publicity, being suspended or debarred from future governmental programs or contracts for a significant period of time and in certain instances could lead to the revocation of our FCC licenses. Moreover, certain governmental agencies frequently reserve the right to terminate their contracts for convenience or if funding is unavailable. If our governmental contracts are terminated for any reason, or if we are suspended or debarred from governmental programs or contracts, our results of operations and financial condition would be materially adversely affected.

Adapting and responding to changing regulatory requirements has historically materially impacted our operations. We believe evolving regulatory developments and regulatory uncertainty could continue to have a material impact on our business. In particular, our business could be materially impacted if the U.S. Congress amends or eliminates current federal law limitations on the liability of private network providers, such as us, against claims related to third party content stored or transmitted on private networks, as currently proposed by certain governmental officials, legislative leaders and consumer interest groups. We could also be materially affected if currently pending proposals to increase the regulation of internet service providers or to further strengthen data privacy laws are implemented. In addition, federal and state agencies that dispense support program payments can, and from time to time do, reduce the amount of those payments to us and other carriers. The variability of these laws could also hamper the ability of us and our customers to plan for the future or establish long-term strategies.

Third-party content stored or transmitted on our networks could result in liability or otherwise damage our reputation.

While we disclaim any liability for third-party content in our service contracts, as a private network provider we potentially could be exposed to legal claims relating to third-party content stored or transmitted on our networks. Such claims could involve, among others, allegations of defamation, invasion of privacy, copyright infringement, or aiding and abetting restricted activities such as online gambling or pornography. Although we believe our liability for these types of claims is limited under current law, suits against other carriers have been successful and we cannot assure you that our defenses will prevail. Such third-party content could also result in adverse publicity and damage our reputation.

Our pending legal proceedings could have a material adverse impact on us.

There are several potentially material proceedings pending against us. Results of these legal proceedings cannot be predicted with certainty. As of any given date we could have exposure to losses under proceedings in excess of our accrued liability. For each of these reasons, any of the proceedings described in Note 17—Commitments, Contingencies and Other Items, as well as current litigation not described therein or future litigation, could have a material adverse effect on our business, reputation, financial position, operating results, the trading price of our securities and our ability to access the capital markets. We can give you no assurances as to the ultimate impact of these matters on us.

We may not be successful in protecting and enforcing our intellectual property rights.

We rely on various patents, copyrights, trade names, trademarks, service marks, trade secrets and other similar intellectual property rights, as well as confidentiality agreements and procedures, to establish and protect our proprietary rights. For a variety of reasons, however, these steps may not fully protect us, including due to inherent limitations on the ability to enforce these rights. If we are unsuccessful in protecting or enforcing our intellectual property rights, our business, competitive position, results of operations and financial condition could be adversely affected.

We have been accused of infringing the intellectual property rights of others and will likely face similar accusations in the future.

We received a number of notices from third parties or have been named in lawsuits filed by third parties claiming we have infringed or are infringing their intellectual property rights. We are currently responding to several of these notices and claims and expect this industry-wide trend will continue. If these claims succeed, we could be required to pay significant monetary damages, to cease using the applicable technology or to make royalty payments to continue using the applicable technology. If we are required to take one or more of these actions, our profit margins may decline, our operations could be materially impaired or we may be required to stop selling or redesign one or more of our products or services, which may adversely affect our business, results of operations, financial condition and cash flows. Similarly, from time to time, we may need to obtain the right to use certain patents or other intellectual property from third parties to be able to offer new products and services. If we cannot obtain rights to use any required technology from a third party on reasonable terms, our ability to offer new products and services may be prohibited, restricted, made more costly or delayed.

Failure to extend or renegotiate our collective bargaining agreements or work stoppages could have a material impact on us.

As of December 31, 2020, approximately 23% of our employees were members of various bargaining units represented by labor unions. Although we have agreements with these labor unions, we cannot predict the outcome of our future negotiations of these agreements. We may be unable to reach new agreements, and union employees may engage in strikes, work slowdowns or other labor actions, which could materially disrupt our ability to provide services and increase our costs. Even if we succeed in reaching new or replacement agreements, they may impose significant new costs on us that impair our competitive position.

Our international operations expose us to various regulatory, currency, tax, legal and other risks.

Our international operations are subject to U.S. and non-U.S. laws and regulations regarding operations in international jurisdictions in which we provide services. These numerous and sometimes conflicting laws and regulations include anti-corruption laws, anti-competition laws, trade restrictions, economic sanctions, tax laws, immigration laws, privacy laws and accounting requirements. Many of these laws are complex and change frequently. There is a risk that these laws or regulations may materially restrict our ability to deliver services in various international jurisdictions or expose us to the risk of fines, penalties or license revocations if we are determined to have violated applicable laws or regulations.

Many non-U.S. laws and regulations relating to communications services are more restrictive than U.S. laws and regulations, particularly those relating to privacy rights and data retention. Moreover, many countries are still in the early stages of providing for and adapting to a liberalized telecommunications market, which could make it more difficult for us to obtain licenses and conduct our operations.

In addition to these international regulatory risks, some of the other risks inherent in conducting business internationally include: economic, social and political instability, with the attendant risks of terrorism, kidnapping, extortion, civic unrest and potential seizure or nationalization of assets; currency and exchange controls, repatriation restrictions and fluctuations in currency exchange rates, including, without limitation, the matters outlined in Note 1— Background and Summary of Significant Accounting Policies — Foreign Currency; problems collecting accounts receivable; the difficulty or inability in certain jurisdictions to enforce contract or intellectual property rights; reliance on certain third parties with whom we lack extensive experience; supply chain challenges; and challenges in securing and maintaining the necessary physical and telecommunications infrastructure.

Changes in multilateral conventions, treaties, tariffs or other arrangements between or among sovereign nations could impact us. Specifically, the United Kingdom recently exited the European Union ("Brexit") subject to the negotiation of additional separation agreements with the European Union regarding data sharing, financial services and other matters. Brexit could potentially impact our supply chains, logistics, and human resources, and subject us to additional regulatory complexities. Additionally, Brexit and other changes in multilateral arrangements may more broadly adversely affect our operations and financial results.

Financial Risks

Our significant debt levels expose us to a broad range of risks.

As of December 31, 2020, we had approximately \$12.5 billion of outstanding consolidated secured indebtedness, \$19.3 billion of outstanding consolidated unsecured indebtedness (excluding finance lease obligations, unamortized discounts, net and unamortized debt issuance costs) and \$2.0 billion of unused borrowing capacity under our Revolving Credit Facility.

Our significant levels of debt and related debt service obligations could adversely affect us in several respects, including:

- requiring us to dedicate a substantial portion of our cash flow from operations to the payment of interest and principal on our debt, thereby reducing the funds available to us for other purposes, including acquisitions, capital expenditures, strategic initiatives and dividends;
- hindering our ability to capitalize on business opportunities and to plan for or react to changing market, industry, competitive or economic conditions;
- making us more vulnerable to economic or industry downturns, including interest rate increases;
- placing us at a competitive disadvantage compared to less leveraged companies;
- making it more difficult or expensive for us to obtain any necessary future financings or refinancings, including the risk that this could force us to sell assets or take other less desirable actions to raise capital; and
- increasing the risk that we may not meet the financial or non-financial covenants contained in our debt agreements or timely make all required debt payments, either of which could result in the acceleration of some or all of our outstanding indebtedness.

The effects of each of these factors could be intensified if we increase our borrowings or experience any downgrade in our credit ratings or those of our affiliates. Subject to certain limitations and restrictions, the current terms of our debt instruments and our subsidiaries' debt instruments permit us or them to incur additional indebtedness.

We expect to periodically require financing, and we cannot assure you we will be able to obtain such financing on terms that are acceptable to us, or at all.

We expect to periodically require financing in the future to refinance existing indebtedness and potentially for other purposes. Our ability to arrange additional financing will depend on, among other factors, our financial position, performance, and credit ratings, as well as prevailing market conditions and other factors beyond our control. Prevailing market conditions could be adversely affected by (i) general market conditions, such as disruptions in domestic or overseas sovereign or corporate debt markets, geo-political instabilities, trade restrictions, pandemics, contractions or limited growth in the economy or other similar adverse economic developments in the U.S. or abroad, and (ii) specific conditions in the communications industry. Instability in the domestic or global financial markets has from time to time resulted in periodic volatility and disruptions in capital markets. For these and other reasons, we can give no assurance additional financing for any of these purposes will be available on terms acceptable to us, or at all.

If we are unable to make required debt payments or refinance our debt, we would likely have to consider other options, such as selling assets, issuing additional securities, reducing or terminating our dividend payments, cutting or delaying costs or otherwise reducing our cash requirements, or negotiating with our lenders to restructure our applicable debt. Our current and future debt instruments may restrict, or market or business conditions may limit, our ability to complete some of these actions on favorable terms, or at all. For these and other reasons, we cannot assure you we could implement these steps in a sufficient or timely manner, or at all.

We have a highly complex debt structure, which could impact the rights of our investors.

Lumen Technologies, Inc. and various of its subsidiaries owe substantial sums pursuant to various debt and financing arrangements, certain of which are guaranteed by other principal subsidiaries. Almost half of the debt of Lumen Technologies, Inc. is guaranteed by certain of its principal domestic subsidiaries, some of which have pledged substantially all of their assets (including certain of their respective subsidiaries) to secure their guarantees. The remainder of the debt of Lumen Technologies, Inc. is neither guaranteed nor secured. Nearly half of the debt of Level 3 Financing, Inc. is (i) secured by a pledge of substantially all of its assets and (ii) guaranteed on a secured basis by certain of its affiliates. The remainder of the debt of Level 3 Financing, Inc. is not secured by any of its assets, but is guaranteed by certain of its affiliates. Substantial amounts of debt are also owed by two direct or indirect subsidiaries of Qwest Communications International Inc. and by Embarq Corporation and one of its subsidiaries. Most of the approximately 400 subsidiaries of Lumen Technologies, Inc. have neither borrowed money nor guaranteed any of the debt of Lumen Technologies, Inc. or its affiliates. As such, investors in our consolidated debt instruments should be aware that (i) determining the priority of their rights as creditors is a complex matter which is substantially dependent upon the assets and earning power of the entities that issued or guaranteed (if any) the applicable debt and (ii) a substantial portion of such debt is structurally subordinated to all liabilities of the non-guarantor subsidiaries of Lumen Technologies, Inc. to the extent of the value of those subsidiaries that are obligors.

Our various debt agreements include restrictions and covenants that could (i) limit our ability to conduct operations or borrow additional funds, (ii) restrict our ability to engage in inter-company transactions, and (iii) lead to the acceleration of our repayment obligations in certain instances.

Under our consolidated debt and financing arrangements the issuer of the debt is subject to various covenants and restrictions, the most restrictive of which pertain to the debt of Lumen Technologies, Inc. and Level 3 Financing, Inc.

Lumen Technologies, Inc.'s senior secured credit facilities and secured notes contain several significant limitations restricting Lumen Technologies, Inc.'s ability to, among other things, borrow additional money or issue guarantees; pay dividends or other distributions to shareholders; make loans; create liens on assets; sell assets; transact with our affiliates and engage in mergers or consolidations. These restrictive covenants could materially adversely affect our ability to operate or reconfigure our business, to pursue acquisitions, divestitures or strategic transactions, or to otherwise pursue our plans and strategies.

The debt and financing arrangements of Level 3 Financing, Inc. contain substantially similar limitations that restrict their operations on a standalone basis as a separate restricted group. Consequently, certain of these covenants may significantly restrict our ability to receive cash from Level 3, to distribute cash from Level 3 to other of our affiliated entities, or to enter into other transactions among our wholly-owned entities.

Lumen Technologies, Inc.'s senior secured credit facilities and senior secured notes, as well as the term loan debt of Qwest Corporation also contain financial maintenance covenants.

The failure of Lumen Technologies, Inc. or any of its subsidiaries to comply with the above-described restrictive or financial covenants could result in an event of default, which, if not cured or waived, could accelerate our debt repayment obligations. Certain of our debt instruments have cross-default or cross-acceleration provisions. When present, these provisions could have a wider impact on liquidity than might otherwise arise from a default or acceleration of a single debt instrument.

Our cash flows may not adequately fund all of our cash requirements.

Our business is capital intensive. We expect to continue to require significant cash to maintain, upgrade and expand our network infrastructure as a result of several factors, including (i) changes in customers' service requirements; (ii) our continuing need to expand and improve our network to remain competitive; and (iii) our regulatory commitments. We will also continue to need substantial amounts of cash to meet our fixed commitments and other business objectives, including without limitation funding our operating costs, maintenance expenses, debt repayments, tax obligations, periodic pension contributions and other benefits payments. We cannot assure you our future cash flows from operating activities will be sufficient to fund all of our cash requirements in the manner currently contemplated.

As a holding company, we rely on payments from our operating companies to meet our obligations.

As a holding company, substantially all of our income and operating cash flow is dependent upon the earnings of our subsidiaries and their distribution of those earnings to us in the form of dividends, loans or other payments. As a result, we rely upon our subsidiaries to generate cash flows in amounts sufficient to fund our obligations, including the payment of our long-term debt. Our subsidiaries are separate and distinct legal entities and have no obligation to pay any amounts owed by us, except to the extent they have guaranteed such payments. Similarly, subject to limited exceptions for tax-sharing or cash management purposes, our subsidiaries have no obligation to make any funds available to us to repay our obligations, whether by dividends, loans or other payments. As discussed in greater detail elsewhere herein, restrictions imposed by credit instruments or other agreements applicable to Level 3 and certain of our other subsidiaries limit the amount of funds our subsidiaries are permitted to transfer to us, including the amount of dividends that may be paid to us. Moreover, our rights to receive assets of any subsidiary upon its liquidation or reorganization will be effectively subordinated to the claims of creditors of that subsidiary, including trade creditors. In addition, the laws under which our subsidiaries were organized typically restrict the amount of dividends they may pay. The ability of our subsidiaries to transfer funds could be further restricted under applicable tax laws or state regulatory orders or regulations. For all these reasons, you should not assume our subsidiaries will be able in the future to generate and distribute to us cash in amounts sufficient to fund our cash requirements.

We cannot assure you we will continue paying dividends at the current rates, or at all.

We cannot assure you we will continue periodic dividends on our capital stock at the current rates, or at all. From time to time, our board has reduced our dividend rate, including reductions in 2019 and 2013.

Any quarterly dividends on our common stock and our outstanding shares of preferred stock will be paid from funds legally available for such purpose when, as and if declared by our Board of Directors. Decisions on whether, when and in which amounts to continue making any future dividend distributions will remain at all times entirely at the discretion of our Board of Directors, which reserves the right to change or terminate our dividend practices at any time and for any reason without prior notice. Holders of our equity securities should be aware they have no contractual or other legal right to receive dividends.

Similarly, holders of our common stock should be aware repurchases of our common stock under any repurchase plan then in effect are completely discretionary and may be suspended or discontinued at any time for any reason regardless of our financial position.

We may not be able to fully utilize our NOLs.

As of December 31, 2020, we had approximately \$5.1 billion of federal Net Operating Losses ("NOLs"), which are subject to limitations under Section 382 of the Internal Revenue Code and related regulations. These limitations could restrict our ability to use these NOLs in the amounts we project. In an effort to safeguard our NOLs, we have maintained an NOL rights agreement since February 2019.

At December 31, 2020, we also had substantial state NOLs and foreign NOLs which we believe are subject to legal and practical limitations on our ability to realize their full benefit. We cannot assure you we will be able to utilize these NOLs as projected or at all.

Increases in costs for pension and healthcare benefits for our active and retired employees may have a material impact on us.

As of December 31, 2020, we had approximately 33,000 active employees participating in our company-sponsored benefit plans, approximately 63,000 active and retired employees and surviving spouses eligible for post-retirement healthcare benefits, approximately 65,000 pension retirees and approximately 10,000 former employees with vested pension benefits. As of such date, our pension plans and our other post-retirement benefit plans were substantially underfunded from an accounting standpoint. The cost to fund the pension and healthcare benefit plans for our active and retired employees has a significant impact on our profitability. Our costs of maintaining our pension and healthcare plans, and the future funding requirements for these plans, are affected by several factors, including investment returns on funds held by our applicable plan trusts; changes in prevailing interest rates and discount rates or other factors used to calculate the funding status of our plans; increases in healthcare costs generally or claims submitted under our healthcare plans specifically; the longevity and payment elections of our plan participants; changes in plan benefits; and the impact of the continuing implementation, modification or potential repeal of current federal healthcare and pension funding laws and regulations promulgated thereunder. If interest rates remain depressed for sustained periods, our plan funding costs could substantially increase. Increased costs under these plans could reduce our profitability and increase our funding commitments to our pension plans.

See Note 10—Employee Benefits for additional information regarding the funded status of our pension plans and our other post-retirement benefit plans.

Reform of financing “benchmarks,” including London Inter-Bank Offered Rate (“LIBOR”), is ongoing and could have a material adverse effect on us.

LIBOR and other interest rate and other types of indices which are deemed to be financing “benchmarks” are the subject of ongoing international regulatory reform, with the initial phase of the non-publication of LIBOR data scheduled to begin on December 1, 2021. Any changes announced by regulators or any other governance or oversight body, or future changes adopted thereby, regarding the continuing use or method of determining LIBOR rates may impact our interest costs. Although we believe our variable rate indebtedness provides for alternative methods of calculating the interest rate payable on such indebtedness if LIBOR is not reported, uncertainty as to the extent and manner of future changes may adversely affect the value of our variable rate indebtedness. In addition, uncertainty regarding the nature of these changes or alternative reference rates could cause market disruptions for variable-rate debt instruments or increase our cost of debt.

Lapses in our disclosure controls and procedures or internal control over financial reporting could materially and adversely affect us.

We maintain (i) disclosure controls and procedures designed to provide reasonable assurances regarding the accuracy and completeness of our SEC reports and (ii) internal control over financial reporting designed to provide reasonable assurance regarding the reliability and compliance with U.S. generally accepted accounting principles (“GAAP”) of our financial statements. We cannot assure you these measures will be effective. Our management previously identified two material weaknesses that, while successfully remediated during 2019, caused us to request an extension in order to timely file our annual report on Form 10-K for the year ended December 31, 2018 and were costly to remediate.

If we are required to record additional intangible asset impairments, we will be required to record a significant charge to earnings and reduce our stockholders' equity.

As of December 31, 2020, approximately 46% of our total consolidated assets reflected on the consolidated balance sheet included in this annual report consisted of goodwill, customer relationships and other intangible assets. From time to time, including most recently in the fourth quarter of 2018, the first quarter of 2019 and the fourth quarter of 2020, we have recorded large non-cash charges to earnings in connection with required reductions of the value of our intangible assets. If our intangible assets are determined to be impaired in the future, we may be required to record additional significant, non-cash charges to earnings during the period in which the impairment is determined to have occurred. Any such charges could, in turn, have a material adverse effect on our results of operation or financial condition.

We face other financial risks.

We face other financial risks, including among others:

- the risk that downgrades in our credit ratings could adversely impact the liquidity or market prices of our outstanding debt or equity securities; and
- the risk that a change of control of us or certain of our affiliates will accelerate a substantial portion of our outstanding indebtedness in an amount that we might not be able to repay, or could adversely impact our ability to continue periodic dividends on our capital stock at current rates, or at all.

General Risk Factors

Unfavorable general economic, societal or environmental conditions could negatively impact us.

Unfavorable general economic, societal or environmental conditions, including unstable economic and credit markets, or depressed economic activity caused by trade wars, epidemics, pandemics, wars, societal unrest, rioting, civic disturbances, natural disasters, terrorist attacks, environmental disasters, political instability or other factors, could negatively affect our business or operations. While it is difficult to predict the ultimate impact of these general economic, societal or environmental conditions, they could adversely affect demand for some of our products and services and could cause customers to shift to lower-priced products and services or to delay or forego purchases of our products and services. Any one or more of these circumstances could continue to depress our revenue. Also, our customers may encounter financial hardships or may not be able to obtain adequate access to credit, which could negatively impact their ability to make timely payments to us.

Shareholder or debtholder activism efforts could cause a material disruption to our business.

While we always welcome constructive input from our shareholders and regularly engage in dialogue with our shareholders to that end, activist shareholders may from time to time engage in proxy solicitations, advance shareholder proposals or otherwise attempt to effect changes or acquire control over us. Responding to these actions can be costly and time-consuming and may disrupt our operations and divert the attention of our board and management. These adverse impacts could be intensified if activist shareholders advocate actions that are not supported by other shareholders, our board or management. The recent increase in the activism of debtholders could increase the risk of claims being made under our debt agreements.

Our agreements and organizational documents and applicable law could similarly limit another party's ability to acquire us.

A number of provisions in our organizational documents and various provisions of applicable law or our NOL rights agreement may delay, defer or prevent a future takeover of us unless the takeover is approved by our board. These provisions (which are described further in our Registration Statement on Form 8-A/A filed with the SEC on March 2, 2015) could deprive our shareholders of any related takeover premium.

We face other general risks.

As a large multinational business with complex operations, we face various other general risks, including among others:

- the risk a perceived failure to meet evolving environmental, social and governance ("ESG") practices or benchmarks could adversely impact our business, brand, stock price or cost of capital;
- the risk a challenge to our ESG statements could lead to reputational harm or lawsuits;
- the risk that statements, political donations, advocacy positions or similar actions attributable to us or our operations could harm our reputation, brand or business; and
- the risk that one or more of our ongoing tax audits or examinations could result in tax liabilities that differ materially from those we have recognized in our consolidated financial statements.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our property, plant and equipment consists principally of fiber-optic and metallic cables, high-speed transport equipment, electronics, switches, routers, cable landing stations, central office equipment, land and buildings related to our operations. Our gross property, plant and equipment consisted of the following components:

	As of December 31,	
	2020	2019
Land	1 %	2 %
Fiber, conduit and other outside plant ⁽¹⁾	46 %	45 %
Central office and other network electronics ⁽²⁾	36 %	35 %
Support assets ⁽³⁾	14 %	14 %
Construction in progress ⁽⁴⁾	3 %	4 %
Gross property, plant and equipment	100 %	100 %

(1) Fiber, conduit and other outside plant consists of fiber and metallic cables, conduit, poles and other supporting structures.

(2) Central office and other network electronics consists of circuit and packet switches, routers, transmission electronics and electronics providing service to customers.

(3) Support assets consist of buildings, cable landing stations, data centers, computers and other administrative and support equipment.

(4) Construction in progress includes inventory held for construction and property of the aforementioned categories that is under construction and has not yet been placed in service.

We own substantially all of our telecommunications equipment required for our business. However, we lease from third parties certain facilities, plant, equipment under various finance and operating lease arrangements when the leasing arrangements are more favorable to us than purchasing the assets. We also own and lease administrative offices in major metropolitan locations both in the United States and internationally. Substantially all of our network electronics equipment is located in buildings or on land that we own or lease, typically within our local service area. Outside of our local service area, our assets are generally located on real property pursuant to an agreement with the property owner or another person with rights to the property. It is possible that we may lose our rights under one or more of these agreements, due to their termination or expiration or in connection with legal challenges to our rights under such agreements. With the acquisition of Level 3 on November 1, 2017, we acquired, among other things, title or leasehold rights to various cable landing stations and data centers throughout the world related to undersea and terrestrial cable systems.

Our net property, plant and equipment was approximately \$26.3 billion and \$26.1 billion at December 31, 2020 and 2019, respectively. Substantial portions of our property, plant and equipment is pledged to secure the long-term debt of our subsidiaries or the guarantee obligations of our subsidiary guarantors. For additional information, see Note 8—Property, Plant and Equipment to our consolidated financial statements in Item 8 of Part II of this report.

ITEM 3. LEGAL PROCEEDINGS

The information contained under the subheadings "Pending Matters" and "Other Proceedings and Disputes" in Note 17—Commitments, Contingencies and Other Items to our consolidated financial statements included in Item 8 of Part II of this report 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

Our common stock is listed on the New York Stock Exchange ("NYSE") and the Berlin Stock Exchange and is traded under the symbol LUMN and CYTH, respectively.

At February 23, 2021, there were approximately 89,000 stockholders of record, although there were significantly more beneficial holders of our common stock.

As described in greater detail in "Risk Factors" in Item 1A of Part I of this report, the declaration and payment of dividends is at the discretion of our Board of Directors, and will depend upon our financial results, cash requirements, future prospects and other factors deemed relevant by our Board of Directors.

Issuer Purchases of Equity Securities

The following table contains information about shares of our previously-issued common stock that we withheld from employees upon vesting of their stock-based awards during the fourth quarter of 2020 to satisfy the related tax withholding obligations:

Period	Total Number of Shares Withheld for Taxes	Average Price Paid Per Share
October 2020	30,741	\$ 10.12
November 2020	165,096	9.00
December 2020	13,514	10.59
Total	209,351	

Equity Compensation Plan Information

See Item 12 of this report.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable. See "Changes From Prior Periodic Reports" in Item 1 of Part I of this report.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

All references to "Notes" in this Item 7 of Part II refer to the Notes to Consolidated Financial Statements included in Item 8 of Part II of this report. Certain statements in this report constitute forward-looking statements. See "Special Note Regarding Forward-Looking Statements" immediately prior to Item 1 of Part I of this report for factors relating to these statements and "Risk Factors" in Item 1A of Part I of this report for a discussion of certain risk factors applicable to our business, financial condition, results of operations, liquidity or prospects.

Overview

We are an international facilities-based technology and communications company focused on providing our business and residential customers with a broad array of integrated services and solutions necessary to fully participate in our rapidly evolving digital world. We believe we are the world's most inter-connected network and our platform empowers our customers to rapidly adjust digital programs to meet immediate demands, create efficiencies, accelerate market access, and reduce costs – allowing customers to rapidly evolve their IT programs to address dynamic changes without distraction from their core competencies. With approximately 450,000 route miles of fiber optic cable globally, we are among the largest providers of communications services to domestic and global enterprise customers. Our terrestrial and subsea fiber optic long-haul network throughout North America, Europe, Latin America and Asia Pacific connects to metropolitan fiber networks that we operate. We provide services in over 60 countries, with most of our revenue being derived in the U.S.

Impact of COVID-19 Pandemic

In response to the safety and economic challenges arising out of the COVID-19 pandemic and in an attempt to mitigate the negative impact on our stakeholders, we have taken a variety of steps to ensure the availability of our network infrastructure, to promote the safety of our employees and customers, to enable us to continue to adapt and provide our products and services worldwide to our customers, and to strengthen our communities. These steps have included:

- taking the FCC's "Keep Americans Connected Pledge," under which we waived certain late fees and suspended the application of data caps and service terminations for non-payment by certain consumer and small business customers through the end of the second quarter of 2020;
- establishing new protocols for the safety of our on-site technicians and customers, including our "Safe Connections" program;
- adopting a rigorous employee work-from-home policy and substantially restricting non-essential business travel, each of which remains in place;
- continuously monitoring our network to enhance its ability to respond to changes in usage patterns;
- donating products or services in several of our communities to enhance their abilities to provide necessary support services; and
- taking steps to maintain our internal controls and the security of our systems and data in a remote work environment.

As the pandemic continues and vaccination rates increase, we expect to revise our responses or take additional steps to adjust to changed circumstances.

Social distancing, business and school closures, travel restrictions, and other actions taken in response to the pandemic have impacted us, our customers and our business since March 2020. In particular, during the second half of 2020, we rationalized our lease footprint and ceased using 16 leased property locations that were underutilized due to the COVID-19 pandemic. The Company determined that they no longer needed the leased space and, due to the limited remaining term on the contracts, concluded that the Company had neither the intent nor ability to sublease the properties. As a result, we incurred accelerated lease costs of approximately \$41 million. In conjunction with our plans to continue to reduce costs, we expect to continue our real estate rationalization efforts and incur additional costs in 2021. Additionally, as discussed further elsewhere herein, we are tracking pandemic impacts such as: (i) increases in certain revenue streams and decreases in others (including late fee revenue), (ii) increases in allowances for credit losses each quarter since the start of the pandemic, (iii) increase in overtime expenses and (iv) delays in our cost transformation initiatives. Thus far, these changes have not materially impacted our financial performance or financial position. This could change, however, if the pandemic intensifies or economic conditions deteriorate. The impact of the pandemic during 2021 will materially depend on additional steps that we may take in response to the pandemic and various events outside of our control, including the pace of vaccinations worldwide, the length and severity of the health crisis and economic slowdown, actions taken by governmental agencies or legislative bodies, and the impact of those events on our employees, suppliers and customers. For additional information, see the risk factor disclosures set forth or referenced in Item 1A of Part II of this report.

For additional information on the impacts of the pandemic, see the remainder of this item, including "—Liquidity and Capital Resources — Overview of Sources and Uses of Cash," and "— Pension and Post-retirement Benefit Obligations."

Reporting Segments

Our reporting segments are organized by customer demographics. At December 31, 2020, they consisted of:

- *International and Global Accounts Management ("IGAM") Segment.* Under our IGAM segment, we provided our products and services to approximately 200 global enterprise customers and three operating regions: Europe Middle East and Africa, Latin America and Asia Pacific;
- *Enterprise Segment.* Under our enterprise segment, we provided our products and services to large and regional domestic and global enterprises, as well as the public sector, which includes the U.S. Federal Government, state and local governments and research and education institutions;
- *Small and Medium Business ("SMB") Segment.* Under our SMB segment, we provided our products and services to small and medium businesses directly and indirectly through our channel partners;
- *Wholesale Segment.* Under our wholesale segment, we provided our products and services to a wide range of other communication providers across the wireline, wireless, cable, voice and data center sectors. Our wholesale customers range from large global telecom providers to small regional providers; and
- *Consumer Segment.* Under our consumer segment, we provided our products and services to residential customers. Additionally, certain state support payments, Connect America Fund ("CAF") federal support revenue, and other revenue from leasing and subleasing, including 2018 rental income associated with the 2017 failed-sale-leaseback are reported in our consumer segment as regulatory revenue. At December 31, 2020, we served 4.5 million consumer broadband subscribers. Our methodology for counting consumer broadband subscribers may not be comparable to those of other companies.

See Note 16—Segment Information for additional information.

At December 31, 2020, we categorized our products and services revenue among the following four categories for the IGAM, Enterprise, SMB and Wholesale segments:

- *IP and Data Services*, which include primarily VPN data networks, Ethernet, IP, content delivery and other ancillary services;
- *Transport and Infrastructure*, which includes wavelengths, dark fiber, private line, colocation and data center services, including cloud, hosting and application management solutions, professional services and other ancillary services;
- *Voice and Collaboration*, which includes primarily local and long-distance voice, including wholesale voice, and other ancillary services, as well as VoIP services; and
- *IT and Managed Services*, which include information technology services and managed services, which may be purchased in conjunction with our other network services.

At December 31, 2020, we categorized our products and services revenue among the following four categories for the Consumer segment:

- *Broadband*, which includes high speed, fiber-based and lower speed DSL broadband services;
- *Voice*, which include local and long-distance services;

- *Regulatory Revenue*, which consist of (i) CAF and other support payments designed to reimburse us for various costs related to certain telecommunications services and (ii) other operating revenue from the leasing and subleasing of space; and
- *Other*, which include retail video services (including our linear TV services), professional services and other ancillary services.

Additionally, beginning in the first quarter of 2021, we plan on making changes to the product category reporting to better reflect product life cycles and the company's marketing approach. These changes will include both the creation of new product categories and the realignment of products and services within previously reported product categories. For Business segment revenue, we will report the following product categories: Compute & Application Services, IP & Data Services, Fiber Infrastructure Services and Voice & Other, by customer-facing sales channel. For Mass Markets segment revenue, we will report the following product categories: Consumer Broadband, Small Business Group ("SBG") Broadband, Voice & Other and CAF Phase II.

Trends Impacting Our Operations

In addition to the above-described impact of the pandemic, our consolidated operations have been, and are expected to continue to be, impacted by the following company-wide trends:

- Customers' demand for automated products and services and competitive pressures will require that we continue to invest in new technologies and automated processes to improve the customer experience and reduce our operating expenses.
- The increasingly digital environment and the growth in online video require robust, scalable network services. We are continuing to enhance our product capabilities and simplify our product portfolio based on demand and profitability to enable customers to have access to greater bandwidth.
- Businesses continue to adopt distributed, global operating models. We are expanding and enhancing our fiber network, connecting more buildings to our network to generate revenue opportunities and reducing our reliance upon other carriers.
- Industry consolidation, coupled with changes in regulation, technology and customer preferences, are significantly reducing demand for our traditional voice services and are pressuring some other revenue streams through volume or rate reductions, while other advances, such as the need for lower latency provided by Edge computing or the implementation of 5G networks, are expected to create opportunities.
- The operating margins of several of our newer, more technologically advanced services, some of which may connect to customers through other carriers, are lower than the operating margins on our traditional, on-net wireline services.
- Declines in our traditional wireline services have necessitated right-sizing our cost structures to remain competitive.

Results of Operations

In this section, we discuss our overall results of operations and highlight special items that are not included in our segment results. In "Segment Results of Operations" we review the performance of our five reporting segments in more detail.

Consolidated Revenue

The following table summarizes our consolidated operating revenue recorded under each of our eight above described revenue categories:

	Years Ended December 31,			Years Ended December 31,		
	2020	2019	% Change	2019	2018	% Change
	(Dollars in millions)			(Dollars in millions)		
IP and Data Services	\$ 6,372	6,621	(4) %	6,621	6,614	— %
Transport and Infrastructure	4,989	5,019	(1) %	5,019	5,256	(5) %
Voice and Collaboration	3,621	3,766	(4) %	3,766	4,091	(8) %
IT and Managed Services	479	535	(10) %	535	625	(14) %
Broadband	2,909	2,876	1 %	2,876	2,824	2 %
Voice	1,622	1,837	(12) %	1,837	2,127	(14) %
Regulatory	615	632	(3) %	632	727	(13) %
Other	105	172	(39) %	172	316	(46) %
Total operating revenue	\$ 20,712	21,458	(3) %	21,458	22,580	(5) %

Our consolidated revenue decreased by \$746 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019 largely due to revenue declines in most of our revenue categories. See our segment results below for additional information.

Our consolidated revenue decreased by \$1.1 billion for the year ended December 31, 2019 compared to the year ended December 31, 2018 largely due to revenue declines in most of our revenue categories. See our segment results below for additional information.

Operating Expenses

The following tables summarize our operating expenses:

	Years Ended December 31,			Years Ended December 31,		
	2020	2019	% Change	2019	2018	% Change
	(Dollars in millions)			(Dollars in millions)		
Cost of services and products (exclusive of depreciation and amortization)	\$ 8,934	9,134	(2) %	9,134	9,999	(9) %
Selling, general and administrative	3,464	3,715	(7) %	3,715	4,165	(11) %
Depreciation and amortization	4,710	4,829	(2) %	4,829	5,120	(6) %
Goodwill impairment	2,642	6,506	(59) %	6,506	2,726	139 %
Total operating expenses	\$ 19,750	24,184	(18) %	24,184	22,010	10 %

Cost of Services and Products (exclusive of depreciation and amortization)

Cost of services and products (exclusive of depreciation and amortization) decreased by \$200 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019. The decrease in costs of services and products (exclusive of depreciation and amortization) was primarily due to reductions in (i) salaries and wages and employee-related expense from lower headcount directly related to operating and maintaining our network and from lower medical costs from the COVID-19 pandemic, (ii) professional fees from contractors and consultants, (iii) facility costs from lower space and power expenses, and (iv) lower commissions due to increased commission deferrals. These reductions were partially offset by increases in severance expense, higher network expense as a result of project impairments and higher voice usage from conferencing sales.

Cost of services and products (exclusive of depreciation and amortization) decreased by \$865 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The decrease in costs of services and products (exclusive of depreciation and amortization) was primarily due to reductions in (i) salaries and wages and employee-related expenses from lower headcount directly related to operating and maintaining our network, (ii) network expenses and voice usage costs, (iii) customer premises equipment costs from lower sales, (iv) content costs from Prism TV, and (v) lower space and power expenses. These reductions were partially offset by increases in direct taxes and fees, professional services, customer installation costs and right of way and dark fiber expenses.

Selling, General and Administrative

Selling, general and administrative expenses decreased by \$251 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019. The decrease in selling, general and administrative expenses was primarily due to reductions in salaries and wages and employee-related expenses from lower headcount and lower medical costs from the COVID-19 pandemic, lower workers compensation expenses and lower professional fees. These reductions were partially offset by increases in the allowance for credit losses related to the impact of the COVID-19 pandemic and property and other taxes.

Selling, general and administrative expenses decreased by \$450 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The decrease in selling, general and administrative expenses was primarily due to reductions in salaries and wages and employee-related expenses from lower headcount, contract labor costs, lower rent expense in 2019 and from higher exited lease obligations in 2018, hardware and software maintenance costs, marketing and advertising expenses, bad debt expense, property and other taxes and an increase in the amount of labor capitalized or deferred and gains on the sale of assets. These reductions were slightly offset by higher professional fees, network infrastructure maintenance expenses and commissions.

Depreciation and Amortization

The following tables provide detail of our depreciation and amortization expense:

	Years Ended December 31,		% Change	Years Ended December 31,		% Change
	2020	2019		2019	2018	
	(Dollars in millions)			(Dollars in millions)		
Depreciation	2,963	3,089	(4) %	3,089	3,339	(7) %
Amortization	1,747	1,740	— %	1,740	1,781	(2) %
Total depreciation and amortization	<u>\$ 4,710</u>	<u>4,829</u>	(2) %	<u>4,829</u>	<u>5,120</u>	(6) %

Depreciation expense decreased by \$126 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to a \$239 million reduction attributable to the impact of annual rate depreciable life changes, partially offset by \$156 million of higher depreciation expense associated with net growth in depreciable assets.

Depreciation expense decreased by \$250 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018, primarily due to the impact of the full depreciation in 2018 of plant, property, and equipment assigned a one year life at the time we acquired Level 3 of \$200 million, the impact of annual rate depreciable life changes of \$108 million, and the discontinuation of depreciation on failed-sale-leaseback assets on \$69 million. These decreases were partially offset by higher depreciation expense of \$93 million associated with net growth in depreciable assets and increases associated with changes in our estimates of the remaining economic life of certain network assets of \$34 million.

Amortization expense increased by \$7 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to increases associated with the net growth in amortizable assets of \$54 million and the accelerated amortization for a decommissioned applications of \$31 million. These increases were partially offset by a decrease of \$70 million from the use of accelerated amortization methods for a portion of the customer intangibles.

Amortization expense decreased by \$41 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The decrease in amortization expense was primarily due to a \$71 million decrease associated with the use of accelerated amortization methods for a portion of the customer intangibles and a \$25 million decrease associated with annual rate amortizable life changes of software for the period. These decreases were partially offset by an increase in amortization of \$55 million associated with net growth in amortizable assets for the period.

Goodwill Impairments

We are required to perform impairment tests related to our goodwill annually, which we perform as of October 31, or sooner if an indicator of impairment occurs.

When we performed our annual impairment test in the fourth quarter of 2020 we concluded that the estimated fair value of our consumer, wholesale, small and medium business and EMEA reporting units were less than our carrying value of equity for such reporting units and we recorded a non-cash non-tax-deductible goodwill impairment charge of approximately \$2.6 billion in the fourth quarter of 2020. When we performed our impairment tests during the first quarter of 2019, we concluded that the estimated fair value of certain of our reporting units was less than our carrying value of equity as of the date of each of our impairment tests during the first quarter of 2019. As a result, we recorded non-cash, non-tax-deductible goodwill impairment charges aggregating to \$6.5 billion in the quarter ended March 31, 2019. Additionally, when we performed our annual impairment test in the fourth quarter of 2018 we concluded that the estimated fair value of our consumer reporting unit was less than our carrying value of equity for such reporting unit and we recorded a non-cash non-tax-deductible goodwill impairment charge of approximately \$2.7 billion in the fourth quarter of 2018.

See Note 2—Goodwill, Customer Relationships and Other Intangible Assets for further details on these tests and impairment charges.

Other Consolidated Results

The following tables summarize our total other expense, net and income tax expense:

	Years Ended December 31,		% Change	Years Ended December 31,		% Change
	2020	2019		2019	2018	
	(Dollars in millions)			(Dollars in millions)		
Interest expense	\$ (1,668)	(2,021)	(17) %	(2,021)	(2,177)	(7) %
Other (expense) income, net	(76)	(19)	nm	(19)	44	nm
Total other expense, net	\$ (1,744)	(2,040)	(15) %	(2,040)	(2,133)	(4) %
Income tax expense	\$ 450	503	(11) %	503	170	196 %

nm Percentages greater than 200% and comparison between positive and negatives values or to/from zero values are considered not meaningful.

Interest Expense

Interest expense decreased by \$353 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019. The decrease in interest expense was primarily due to a decrease in average long-term debt from \$35.4 billion to \$33.3 billion and a decrease in the average interest rate of 5.75% to 5.23%.

Interest expense decreased by \$156 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The decrease in interest expense was primarily due to a decrease in long-term debt from an average of \$36.9 billion in 2018 to \$35.4 billion in 2019.

Other (Expense) Income, Net

Other (expense) income, net reflects certain items not directly related to our core operations, including losses and gains on extinguishments of debt, our share of income from partnerships we do not control, interest income, gains and losses from non-operating asset dispositions, foreign currency gains and losses and components of net periodic pension and postretirement benefit costs.

	Years Ended December 31,			Years Ended December 31,		
	2020	2019	% Change	2019	2018	% Change
	(Dollars in millions)			(Dollars in millions)		
(Loss) gain on extinguishment of debt	\$ (105)	72	nm	72	(7)	nm
Pension and postretirement net periodic expense	(31)	(165)	(81) %	(165)	(15)	nm
Foreign currency gain	30	8	nm	8	10	(20) %
Other	30	66	(55) %	66	56	18 %
Total other (expense) income, net	<u>\$ (76)</u>	<u>(19)</u>	<u>nm</u>	<u>(19)</u>	<u>44</u>	<u>nm</u>

nm Percentages greater than 200% and comparison between positive and negatives values or to/from zero values are considered not meaningful.

The significant decline in pension and post retirement net periodic expense for the year ended December 31, 2020 as compared to the year ended December 31, 2019 is driven by a decline in interest cost due to lower discount rates. The increase of \$150 million in this expense for the year ended December 31, 2019 as compared to the year ended December 31, 2018 reflects a corresponding increase in interest costs due to higher discount rates in that period, as discussed further in Note 10—Employee Benefits.

Income Tax Expense

For the years ended December 31, 2020, 2019 and 2018, our effective income tax rate was (57.5)%, (10.6)%, and (10.9)%, respectively. The effective tax rate for the years ended December 31, 2020, December 31, 2019 and December 31, 2018 include a \$555 million, \$1.4 billion and a \$572 million unfavorable impact of non-deductible goodwill impairments, respectively. Additionally, the effective tax rate for the year ended December 31, 2018 reflects the impact of purchase price accounting adjustments resulting from the Level 3 acquisition and from the tax reform impact of those adjustments of \$92 million. The 2018 unfavorable impacts were partially offset by the tax benefit of a 2017 tax loss carryback to 2016 of \$142 million. See Note 15—Income Taxes and "Critical Accounting Policies and Estimates—Income Taxes" below for additional information.

Segment Results

General

Reconciliation of segment revenue to total operating revenue is below:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Operating revenue			
International and Global Accounts	\$ 3,405	3,476	3,543
Enterprise	5,722	5,696	5,765
Small and Medium Business	2,557	2,727	2,918
Wholesale	3,777	4,042	4,360
Consumer	5,251	5,517	5,994
Total operating revenue	<u>\$ 20,712</u>	<u>21,458</u>	<u>22,580</u>

Reconciliation of segment EBITDA to total adjusted EBITDA is below:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Adjusted EBITDA			
International and Global Accounts	\$ 2,228	2,295	2,354
Enterprise	3,334	3,383	3,354
Small and Medium Business	1,769	1,869	2,012
Wholesale	3,221	3,449	3,731
Consumer	4,612	4,799	5,021
Total segment EBITDA	15,164	15,795	16,472
Operations and Other EBITDA	(6,675)	(7,024)	(7,870)
Total adjusted EBITDA	<u>\$ 8,489</u>	<u>8,771</u>	<u>8,602</u>

For additional information on our reportable segments and product and services categories, see Note 16—Segment Information.

International and Global Accounts Management Segment

	Years Ended December 31,		% Change	Years Ended December 31,		% Change
	2020	2019		2019	2018	
	(Dollars in millions)			(Dollars in millions)		
Revenue:						
IP and Data Services	\$ 1,556	1,627	(4) %	1,627	1,682	(3) %
Transport and Infrastructure	1,265	1,268	— %	1,268	1,230	3 %
Voice and Collaboration	368	354	4 %	354	365	(3) %
IT and Managed Services	216	227	(5) %	227	266	(15) %
Total revenue	3,405	3,476	(2) %	3,476	3,543	(2) %
Total expense	1,177	1,181	— %	1,181	1,189	(1) %
Total adjusted EBITDA	<u>\$ 2,228</u>	<u>2,295</u>	(3) %	<u>2,295</u>	<u>2,354</u>	(3) %

Year Ended December 31, 2020 compared to the same periods ended December 31, 2019 and December 31, 2018

Segment revenue decreased \$71 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased \$67 million for the year ended December 31, 2019 compared to December 31, 2018. Excluding the impact of foreign currency fluctuations, segment revenue decreased \$23 million, or 1%, for the year ended December 31, 2020 compared to December 31, 2019. These changes are primarily due to the following factors:

- IT and managed services revenue declined due to lower volumes of legacy managed hosting services;
- IP and data services revenue declined mostly due to reduced rates and lower traffic;
- Voice and collaboration revenue increased due to higher usage and call volumes; and, for the period ended 2019 compared to 2018, the decrease was driven by stronger non-recurring revenue in 2018 that did not reoccur in 2019;
- Transport and infrastructure revenue increased for the period ended 2019 compared to 2018 due to expanded services for large customers and higher rates.

Segment expenses decreased by \$4 million for the year ended December 31, 2020 compared to December 31, 2019 primarily due to lower headcount related costs, partially offset by higher cost of sales. Segment expenses decreased by \$8 million for the year ended December 31, 2019 compared to December 31, 2018, primarily due to lower cost of sales in line with lower revenue.

Segment adjusted EBITDA as a percentage of revenue was 65% for the year ended December 31, 2020 and 66% for both the years ended December 31, 2019 and 2018, respectively.

Enterprise Segment

	Years Ended December 31,		% Change	Years Ended December 31,		% Change
	2020	2019		2019	2018	
	(Dollars in millions)			(Dollars in millions)		
Revenue:						
IP and Data Services	\$ 2,474	2,538	(3) %	2,538	2,485	2 %
Transport and Infrastructure	1,608	1,479	9 %	1,479	1,484	— %
Voice and Collaboration	1,424	1,423	— %	1,423	1,495	(5) %
IT and Managed Services	216	256	(16) %	256	301	(15) %
Total revenue	5,722	5,696	— %	5,696	5,765	(1) %
Total expense	2,388	2,313	3 %	2,313	2,411	(4) %
Total adjusted EBITDA	\$ 3,334	3,383	(1) %	3,383	3,354	1 %

Year Ended December 31, 2020 Compared to the same periods Ended December 31, 2019 and December 31, 2018

Segment revenue increased by \$26 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased \$69 million for the year ended December 31, 2019 compared to December 31, 2018, due to the following factors:

- For the year ended 2020 compared to 2019, IP and data services revenue decreased, primarily driven by customers migrating from traditional wireline services to more technologically advanced lower rate services, and, for the period ended 2019 compared to 2018, revenue increased due to rate increases.
- for both periods, IT and managed services revenue declined mainly due to churn in legacy managed services;

- for the year ended 2019 compared to 2018, the decline in voice and collaboration revenue was due to a combination of customers discontinuing traditional voice TDM products and lower rates on customers transitioning to VoIP; and
- for the year ended 2020 compared to 2019, transport and infrastructure revenue increased due to strength in our Federal business, mainly in professional services, equipment and managed security services, and for the year ended 2019 compared to 2018, the decline was due to lower professional services and data center and colocation services, partially offset by increased managed security revenue.

Segment expenses increased by \$75 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased \$98 million for the year ended December 31, 2019 compared to December 31, 2018, primarily due to:

- For the year ended 2020 compared to 2019, segment expenses increased due to higher cost of sales in line with revenue increases, partially offset by lower headcount related costs;
- for the year ended 2019 compared to 2018, segment expenses decreased due to lower headcount related costs and external commissions.

Segment adjusted EBITDA as a percentage of revenue was 58%, 59% and 58% for the year ended December 31, 2020, 2019 and 2018, respectively.

Small and Medium Business Segment

	Years Ended December 31,		% Change	Years Ended December 31,		% Change
	2020	2019		2019	2018	
	(Dollars in millions)			(Dollars in millions)		
Revenue:						
IP and Data Services	\$ 1,062	1,091	(3) %	1,091	1,078	1 %
Transport and Infrastructure	352	365	(4) %	365	424	(14) %
Voice and Collaboration	1,098	1,226	(10) %	1,226	1,366	(10) %
IT and Managed Services	45	45	— %	45	50	(10) %
Total revenue	2,557	2,727	(6) %	2,727	2,918	(7) %
Total expense	788	858	(8) %	858	906	(5) %
Total adjusted EBITDA	\$ 1,769	1,869	(5) %	1,869	2,012	(7) %

Year Ended December 31, 2020 Compared to the same periods Ended December 31, 2019 and December 31, 2018

Segment revenue decreased \$170 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased \$191 million for the year ended December 31, 2019 compared to December 31, 2018, primarily due to the following factors:

- For both periods, voice and collaboration revenue decreased due to continued declines in demand for traditional voice TDM services;
- for the year ended 2020 compared to 2019, transport and infrastructure revenue decreased primarily due to continued reductions in demand for our low-speed broadband, and for the year ended 2019 compared to 2018, transport and infrastructure declined primarily due to lower equipment sales and lower demand for broadband services; and
- for the year ended 2020 compared to 2019, IP and data services decreased due to lower VPN revenue and customers transitioning from Ethernet solutions to lower-rate IP services, and for the year ended 2019 compared to 2018, IP and data services increased due to strength in VPN revenue.

Segment expenses decreased by \$70 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased \$48 million for the year ended December 31, 2019 compared to December 31, 2018, primarily due to:

- For the year ended 2020 compared to 2019 due to lower cost of sales in line with lower revenue and lower headcount related costs; and
- for the year ended 2019 compared to 2018 due to lower network costs driven by declines in customer demand, and network expense synergies.

Segment adjusted EBITDA as a percentage of revenue was 69% for the years ended December 31, 2020, 2019 and 2018.

Wholesale Segment

	Years Ended December 31,			Years Ended December 31,		
	2020	2019	% Change	2019	2018	% Change
	(Dollars in millions)			(Dollars in millions)		
Revenue:						
IP and Data Services	\$ 1,280	1,365	(6) %	1,365	1,369	— %
Transport and Infrastructure	1,764	1,907	(7) %	1,907	2,118	(10) %
Voice and Collaboration	731	763	(4) %	763	865	(12) %
IT and Managed Services	2	7	(71) %	7	8	(13) %
Total revenue	3,777	4,042	(7) %	4,042	4,360	(7) %
Total expense	556	593	(6) %	593	629	(6) %
Total adjusted EBITDA	\$ 3,221	3,449	(7) %	3,449	3,731	(8) %

Year Ended December 31, 2020 Compared to the same periods Ended December 31, 2019 and December 31, 2018

Segment revenue decreased \$265 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased \$318 million for the year ended December 31, 2019 compared to December 31, 2018, primarily due to the following factors:

- For both periods, transport and infrastructure revenue decreased due to continued declines in traditional private line services and customer network consolidation and grooming efforts;
- for both periods, voice and collaboration revenue decreased due to market rate compression and lower customer volumes; and
- for the year ended 2020 compared to 2019, IP and data services decreased due to customer churn.

Segment expenses decreased by \$37 million for the year ended December 31, 2020 compared to December 31, 2019, primarily due to lower cost of sales and continued network grooming efforts, partially offset by higher employee related costs, and decreased by \$36 million for the year ended December 31, 2019 compared to December 31, 2018, due to lower cost of sales and network grooming and operating synergies.

Segment adjusted EBITDA as a percentage of revenue was 85%, 85% and 86% for the year ended December 31, 2020, 2019 and 2018, respectively.

Consumer Segment

	Years Ended December 31,			Years Ended December 31,		
	2020	2019	% Change	2019	2018	% Change
	(Dollars in millions)			(Dollars in millions)		
Revenue:						
Broadband	\$ 2,909	2,876	1 %	2,876	2,824	2 %
Voice	1,622	1,837	(12) %	1,837	2,127	(14) %
Regulatory	615	632	(3) %	632	727	(13) %
Other	105	172	(39) %	172	316	(46) %
Total revenue	5,251	5,517	(5) %	5,517	5,994	(8) %
Total expense	639	718	(11) %	718	973	(26) %
Total adjusted EBITDA	\$ 4,612	4,799	(4) %	4,799	5,021	(4) %

Year Ended December 31, 2020 Compared to the same periods Ended December 31, 2019 and December 31, 2018

Segment revenue decreased by \$266 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased by \$477 million for the year ended December 31, 2019 compared to December 31, 2018, primarily due to the following factors:

- For both periods, decreases in our voice and other revenue were driven by continued legacy voice customer losses and our de-emphasis of Prism video product;
- for the year ended December 31, 2019, regulatory revenue declined due to the derecognition of the failed-sales-leaseback described in our prior reports. For the year ended December 31, 2020, regulatory revenue declined due to lower state support revenue;
- for both periods, an increase in Broadband revenue driven by increased demand for higher-speed services and higher rates;

Segment expenses decreased by \$79 million for the year ended December 31, 2020 compared to December 31, 2019 and decreased by \$255 million for the year ended December 31, 2019 compared to December 31, 2018. Expenses decreased for both periods due to lower Prism content costs, headcount related costs and marketing expenses.

Segment adjusted EBITDA as a percentage of revenue was 88%, 87% and 84% for the year ended December 31, 2020, 2019 and 2018, respectively.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with accounting principles that are generally accepted in the United States. The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of our assets, liabilities, revenue and expenses. We have identified certain policies and estimates as critical to our business operations and the understanding of our past or present results of operations related to (i) goodwill, customer relationships and other intangible assets; (ii) pension and post-retirement benefits; (iii) loss contingencies and litigation reserves and (iv) income taxes. These policies and estimates are considered critical because they had a material impact, or they have the potential to have a material impact, on our consolidated financial statements and because they require us to make significant judgments, assumptions or estimates. We believe that the estimates, judgments and assumptions made when accounting for the items described below were reasonable, based on information available at the time they were made. However, actual results may differ from those estimates, and these differences may be material.

Goodwill, Customer Relationships and Other Intangible Assets

We have a significant amount of goodwill and indefinite-lived intangible assets that are assessed at least annually for impairment. At December 31, 2020, goodwill and intangible assets totaled \$27.1 billion, or 46%, of our total assets. The impairment analyses of these assets are considered critical because of their significance to us and our segments.

We have assigned our goodwill balance to our segments at December 31, 2020 as follows:

	International and Global Accounts	Enterprise	Small and Medium Business	Wholesale	Consumer	Total
	(Dollars in millions)					
As of December 31, 2020	\$ 2,555	4,738	2,808	3,114	5,655	18,870

Intangible assets arising from business combinations, such as goodwill, customer relationships, capitalized software, trademarks and tradenames, are initially recorded at estimated fair value. We amortize customer relationships primarily over an estimated life of 7 to 15 years, using either the sum-of-years-digits or the straight-line methods, depending on the customer. We amortize capitalized software using the straight-line method primarily over estimated lives ranging up to 7 years. We amortize our other intangible assets using the sum-of-years-digits or straight-line method over an estimated life of 4 to 20 years. Other intangible assets not arising from business combinations are initially recorded at cost. Where there are no legal, regulatory, contractual or other factors that would reasonably limit the useful life of an intangible asset, we classify the intangible asset as indefinite-lived and such intangible assets are not amortized.

Our long-lived intangible assets, other than goodwill, with indefinite lives are assessed for impairment annually, or, under certain circumstances, more frequently, such as when events or changes in circumstances indicate there may be an impairment. These assets are carried at the estimated fair value at the time of acquisition and assets not acquired in acquisitions are recorded at historical cost. However, if their estimated fair value is less than the carrying amount, we recognize an impairment charge for the amount by which the carrying amount of these assets exceeds their estimated fair value.

Our goodwill was derived from numerous acquisitions where the purchase price exceeded the fair value of the net assets acquired.

We are required to reassign goodwill to reporting units whenever reorganizations of our internal reporting structure changes the composition of our reporting units. Goodwill is reassigned to the reporting units using a relative fair value approach. When the fair value of a reporting unit is available, we allocate goodwill based on the relative fair value of the reporting units. When fair value is not available, we utilize an alternative allocation methodology that represents a reasonable proxy for the fair value of the operations being reorganized. For additional information on our segments, see Note 16—Segment Information.

We are required to assess goodwill at least annually, or more frequently, if an event occurs or circumstances change that indicates it is more likely than not the fair values of our reporting units were less than their carrying values. In assessing goodwill for impairment, we may first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carry value.

Our annual impairment assessment date for goodwill is October 31, at which date we assess our reporting units. At October 31, 2020, our international and global accounts segment was comprised of our North America global accounts ("NA GAM"), Europe, Middle East and Africa region ("EMEA"), Latin America region ("LATAM") and Asia Pacific region ("APAC") reporting units. At October 31, 2020, our reporting units were consumer, small and medium business, enterprise, wholesale, NA GAM, EMEA, LATAM, and APAC.

Our reporting units are not discrete legal entities with discrete full financial statements. Our assets and liabilities are employed in and relate to the operations of multiple reporting units and are allocated to individual reporting units based on their relative revenue or earnings before interest, taxes depreciation and amortization ("EBITDA"). For each reporting unit, we compare its estimated fair value of equity to its carrying value of equity that we assign to the reporting unit. If the estimated fair value of the reporting unit is equal or greater than the carrying value, we conclude that no impairment exists. If the estimated fair value of the reporting unit is less than the carrying value, we record an impairment equal to the difference. Depending on the facts and circumstances, we typically estimate the fair value of our reporting units by considering either or both of (i) a discounted cash flow method, which is based on the present value of projected cash flows over a discrete projection period and a terminal value, which represents the expected normalized cash flows of the reporting units beyond the cash flows from the discrete projection period, and (ii) a market approach, which includes the use of multiples of publicly-traded companies whose services are comparable to ours. With respect to our analysis used in the discounted cash flow method, the timing and amount of projected cash flows under these forecasts require estimates developed from our long-range plan, which is informed by wireline industry trends, the competitive landscape, product lifecycles, operational initiatives, capital allocation priorities and other company-specific and external factors that influence our business. These cash flows consider recent historical results and are consistent with the Company's short-term financial forecasts and long-term business strategies. The development of these cash flows, and the discount rate applied to the cash flows, is subject to inherent uncertainties, and actual results could vary significantly from such estimates. Our determination of the discount rate is based on a weighted average cost of capital approach, which uses a market participant's cost of equity and after-tax cost of debt and reflects certain risks inherent in the future cash flows. With respect to a market approach, the fair value of a reporting unit is estimated based upon a market multiple applied to the reporting unit's revenue and EBITDA, adjusted for an appropriate control premium based on recent market transactions. The fair value of reporting units estimated using revenue and EBITDA market multiples are equally weighted to determine the estimated fair value under the market approach. We also reconcile the estimated fair values of the reporting units to our market capitalization to conclude whether the indicated implied control premium is reasonable in comparison to recent transactions in the marketplace. A decline in our stock price could potentially cause an impairment of goodwill. Changes in the underlying assumptions that we use in allocating the assets and liabilities to reporting units under either the discounted cash flow or market approach method can result in materially different determinations of fair value. We believe the estimates, judgments, assumptions and allocation methods used by us are reasonable, but changes in any of them can significantly affect whether we must incur impairment charges, as well as the size of such charges.

At October 31, 2020, we estimated the fair value of our eight above-mentioned reporting units by considering both a market approach and a discounted cash flow method. We reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2020 and concluded that the indicated control premium of approximately 33.0% was reasonable based on recent market transactions. Due to the decline in our stock price at October 31, 2020 and our assessment performed with respect to the reporting units described above, we concluded that our consumer, wholesale, small and medium business and EMEA reporting units were impaired resulting in a non-cash, non-tax-deductible goodwill impairment charge of \$2.6 billion. As of October 31, 2020, the estimated fair value of equity exceeded the carrying value of equity for our enterprise, NA GAM, LATAM, and APAC reporting units by 2%, 46%, 74% and 23%, respectively. Based on our assessments performed, we concluded that the goodwill for our enterprise, NA GAM, LATAM, and APAC reporting units was not impaired as of October 31, 2020.

At October 31, 2019, we estimated the fair value of our eight above-mentioned reporting units by considering both a market approach and a discounted cash flow method. We reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2019 and concluded that the indicated control premium of approximately 44.7% was reasonable based on recent market transactions. As of October 31, 2019, based on our assessment performed with respect to our eight reporting units, the estimated fair value of our equity exceeded the carrying value of equity for our consumer, small and medium business, enterprise, wholesale, NA GAM, EMEA, LATAM, and APAC reporting units by 44%, 41%, 53%, 46%, 55%, 5%, 63% and 38%, respectively. Based on our assessments performed, we concluded that the goodwill for our eight reporting units was not impaired as of October 31, 2019.

Both our January 2019 internal reorganization and the decline in our stock price indicated the carrying values of our reporting units were more likely than not in excess of their fair values, requiring an impairment test in the first quarter of 2019. Consequently, we evaluated our goodwill in January 2019 and again as of March 31, 2019. Because our low stock price was a key trigger for impairment testing in early 2019, we estimated the fair value of our operations using only the market approach. Applying this approach, we utilized company comparisons and

analyst reports within the telecommunications industry which have historically supported a range of fair values derived from annualized revenue and EBITDA multiples between 2.1x and 4.9x and 4.9x and 9.8x, respectively. We selected a revenue and EBITDA multiple for each of our reporting units within this range. We reconciled the estimated fair values of the reporting units to our market capitalization as of the date of each of our impairment tests during the first quarter and concluded that the indicated control premiums of approximately 4.5% and 4.1% were reasonable based on recent market transactions. In the quarter ended March 31, 2019, based on our assessments performed with respect to the reporting units as described above, we concluded that the estimated fair value of certain of our reporting units was less than our carrying value of equity as of the date of each of our impairment tests during the first quarter. As a result, we recorded non-cash, non-tax-deductible goodwill impairment charges aggregating to \$6.5 billion in the quarter ended March 31, 2019.

At October 31, 2018, we estimated the fair value of our then five reporting units, which we determined to be consumer, medium and small business, enterprise, international and global accounts and wholesale and indirect, by considering both a market approach and a discounted cash flow method. We reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2018 and concluded that the indicated control premium of approximately 0.1% was reasonable based on recent transactions in the marketplace. As of October 31, 2018, based on our assessment we concluded that the estimated fair value of our consumer reporting unit was less than our carrying value of equity for such unit by approximately \$2.7 billion. As a result, we recorded a non-cash, non-tax deductible goodwill impairment charge of \$2.7 billion for goodwill assigned to our consumer segment during the fourth quarter of 2018.

We plan to make changes to our segment and customer-facing sales channel reporting categories in 2021 to align with operational changes designed to better support our customers. Beginning in the first quarter of 2021, the company plans to report two segments: Business and Mass Markets. The Business segment will include four sales channels: International & Global Accounts, Large Enterprise, Mid-Market Enterprise and Wholesale. The Mass Markets segment will include both our Consumer and Small Business Group sales channels. As a result of the organization changes noted above, we will perform a goodwill impairment analysis during the first quarter of 2021.

For additional information on our goodwill balances by segment, see Note 2—Goodwill, Customer Relationships and Other Intangible Assets.

Pension and Post-retirement Benefits

We sponsor a noncontributory qualified defined benefit pension plan (referred to as our qualified pension plan) for a substantial portion of our current and former employees in the United States. In addition to this tax-qualified pension plan, we also maintain several non-qualified pension plans for certain eligible highly compensated employees. We also maintain post-retirement benefit plans that provide health care and life insurance benefits for certain eligible retirees. Due to the insignificant impact of these non-qualified plans on our consolidated financial statements, we have excluded them from the following pension and post-retirement benefits disclosures for 2020, 2019 and 2018.

In 2020, approximately 59% of the qualified pension plan's January 1, 2020 net actuarial loss balance of \$3.0 billion was subject to amortization as a component of net periodic expense over the average remaining service period of 9 years for participating employees expected to receive benefits for the plan. The other 41% of the qualified pension plan's beginning net actuarial loss balance was treated as indefinitely deferred during 2020. The entire beginning net actuarial loss of \$175 million for the post-retirement benefit plans was treated as indefinitely deferred during 2020.

In 2019, approximately 60% of the qualified pension plan's January 1, 2019 net actuarial loss balance of \$3.0 billion was subject to amortization as a component of net periodic expense over the average remaining service period of 9 years for participating employees expected to receive benefits for the plan. The other 40% of the qualified pension plan's beginning net actuarial loss balance was treated as indefinitely deferred during 2020. The entire beginning net actuarial gain of \$7 million for the post-retirement benefit plans was treated as indefinitely deferred during 2019.

In 2018, approximately 55% of the qualified pension plan's January 1, 2018 net actuarial loss balance of \$2.9 billion was subject to amortization as a component of net periodic expense over the average remaining service period of participating employees expected to receive benefits, which ranges from 8 to 9 years for the plan. The other 45% of the qualified pension plan's beginning net actuarial loss balance was treated as indefinitely deferred during 2018. The entire beginning net actuarial loss of \$248 million for the post-retirement benefit plans was treated as indefinitely deferred during 2018.

In computing our pension and post-retirement health care and life insurance benefit obligations, our most significant assumptions are the discount rate and mortality rates. In computing our periodic pension and post-retirement benefit expense, our most significant assumptions are the discount rate and the expected rate of return on plan assets.

The discount rate for each plan is the rate at which we believe we could effectively settle the plan's benefit obligations as of the end of the year. We selected each plan's discount rate based on a cash flow matching analysis using hypothetical yield curves from U.S. corporate bonds rated high quality and projections of the future benefit payments that constitute the projected benefit obligation for the plans. This process establishes the uniform discount rate that produces the same present value of the estimated future benefit payments as is generated by discounting each year's benefit payments by a spot rate applicable to that year. The spot rates used in this process are derived from a yield curve created from yields on the 60th to 90th percentile of U.S. high quality bonds.

Mortality rates help predict the expected life of plan participants and are based on historical demographic studies by the Society of Actuaries ("SOA"). The SOA publishes new mortality rates (mortality tables and projection scales) on a regular basis which reflect updates to projected life expectancies in North America. Historically, we have adopted the new projection tables immediately after publication. In 2020, we adopted the revised mortality tables and projection scale released by the SOA, which decreased the projected benefit obligation of our benefit plans by approximately \$3 million. The change in the projected benefit obligation of our benefit plans was recognized as part of the net actuarial loss and is included in accumulated other comprehensive loss, a portion of which is subject to amortization over the remaining estimated life of plan participants, which was approximately 9 years as of December 31, 2020.

The expected rate of return on plan assets is the long-term rate of return we expect to earn on the plans' assets in the future, net of administrative expenses paid from plan assets. The rate of return is determined by the strategic allocation of plan assets and the long-term risk and return forecast for each asset class. The forecasts for each asset class are generated primarily from an analysis of the long-term expectations of various third-party investment management organizations, to which we then add a factor of 50 basis points to reflect the benefit we expect to result from our active management of the assets. The expected rate of return on plan assets is reviewed annually and revised, as necessary, to reflect changes in the financial markets and our investment strategy.

To compute the expected return on pension and post-retirement benefit plan assets, we apply an expected rate of return to the fair value of the applicable plan assets adjusted for contribution timing and for projected benefit payments to be made from the plan assets. Annual market volatility for these assets (higher or lower than expected return) is reflected in the net actuarial losses.

Changes in any of the above factors could significantly impact operating expenses in the consolidated statements of operations and other comprehensive loss in the consolidated statements of comprehensive income as well as the value of the liability and accumulated other comprehensive loss of stockholders' equity on our consolidated balance sheets.

Loss Contingencies and Litigation Reserves

We are involved in several potentially material legal proceedings, as described in more detail in Note 17—Commitments, Contingencies and Other Items. On a quarterly basis, we assess potential losses in relation to these and other pending or threatened tax and legal matters. For matters not related to income taxes, if a loss is considered probable and the amount can be reasonably estimated, we recognize an expense for the estimated loss. To the extent these estimates are more or less than the actual liability resulting from the resolution of these matters, our earnings will be increased or decreased accordingly. If the differences are material, our consolidated financial statements could be materially impacted.

For matters related to income taxes, if we determine in our judgment that the impact of an uncertain tax position is more likely than not to be sustained upon audit by the relevant taxing authority, then we recognize in our financial statements a benefit for the largest amount that is more likely than not to be sustained. No portion of an uncertain tax position will be recognized if we determine in our judgment that the position has less than a 50% likelihood of being sustained. Though the validity of any tax position is a matter of tax law, the body of statutory, regulatory and interpretive guidance on the application of the law is complex and often ambiguous, particularly in certain of the non-U.S. jurisdictions in which we operate. Because of this, whether a tax position will ultimately be sustained may be uncertain.

Income Taxes

Our provision for income taxes includes amounts for tax consequences deferred to future periods. We record deferred income tax assets and liabilities reflecting future tax consequences attributable to (i) tax credit carryforwards, (ii) differences between the financial statement carrying value of assets and liabilities and the tax basis of those assets and liabilities and (iii) tax net operating loss carryforwards, or NOLs. Deferred taxes are computed using enacted tax rates expected to apply in the year in which the differences are expected to affect taxable income. The effect on deferred income tax assets and liabilities of a change in tax rate is recognized in earnings in the period that includes the enactment date.

The measurement of deferred taxes often involves the exercise of considerable judgment related to the realization of tax basis. Our deferred tax assets and liabilities reflect our assessment that tax positions taken in filed tax returns and the resulting tax basis are more likely than not to be sustained if they are audited by taxing authorities. Assessing tax rates that we expect to apply and determining the years when the temporary differences are expected to affect taxable income requires judgment about the future apportionment of our income among the states in which we operate. Any changes in our practices or judgments involved in the measurement of deferred tax assets and liabilities could materially impact our financial condition or results of operations.

In connection with recording deferred income tax assets and liabilities, we establish valuation allowances when necessary to reduce deferred income tax assets to amounts that we believe are more likely than not to be realized. We evaluate our deferred tax assets quarterly to determine whether adjustments to our valuation allowance are appropriate in light of changes in facts or circumstances, such as changes in tax law, interactions with taxing authorities and developments in case law. In making this evaluation, we rely on our recent history of pre-tax earnings. We also rely on our forecasts of future earnings and the nature and timing of future deductions and benefits represented by the deferred tax assets, all of which involve the exercise of significant judgment. At December 31, 2020, we established a valuation allowance of \$1.5 billion primarily related to foreign and state NOLs, based on our determination that it was more likely than not that this amount of these NOLs would expire unused. If forecasts of future earnings and the nature and estimated timing of future deductions and benefits change in the future, we may determine that existing valuation allowances must be revised or eliminated or new valuation allowances created, any of which could materially impact our financial condition or results of operations. See Note 15—Income Taxes.

Liquidity and Capital Resources

Overview of Sources and Uses of Cash

We are a holding company that is dependent on the capital resources of our subsidiaries to satisfy our parent company liquidity requirements. Several of our significant operating subsidiaries have borrowed funds either on a standalone basis or as part of a separate restricted group with certain of its subsidiaries or affiliates. The terms of the instruments governing the indebtedness of these borrowers or borrowing groups may restrict our ability to access their accumulated cash. In addition, our ability to access the liquidity of these and other subsidiaries may be limited by tax, legal and other considerations.

At December 31, 2020, we held cash and cash equivalents of \$406 million, and we also had approximately \$2.0 billion of borrowing capacity available under our revolving credit facility. We typically use our revolving credit facility as a source of liquidity for operating activities and our other cash requirements. We had approximately \$98 million of cash and cash equivalents outside the United States at December 31, 2020. We currently believe that there are no material restrictions on our ability to repatriate cash and cash equivalents into the United States, and that we may do so without paying or accruing U.S. taxes. We do not currently intend to repatriate to the United States any of our foreign cash and cash equivalents from operating entities outside of Latin America.

In response to COVID-19, the U.S. Congress passed the CARES Act on March 27, 2020. The CARES Act favorably increased our liquidity in 2020 by \$41 million as a result of allowing us to receive a full refund of the alternative minimum tax credit carryforward in 2020, as compared to receiving the refund in phases over the next few years in accordance with the Tax Cuts and Jobs Act. Under the CARES Act, we also deferred \$134 million of our 2020 payroll taxes, which under current law will be required to be repaid in installments over 2021 and 2022.

Our executive officers and our Board of Directors periodically review our sources and potential uses of cash in connection with our annual budgeting process. Generally speaking, our principal funding source is cash from operating activities, and our principal cash requirements include operating expenses, capital expenditures, income taxes, debt repayments, dividends, periodic securities repurchases, periodic pension contributions and other benefits payments.

Based on our current capital allocation objectives, during 2021 we project expending approximately \$3.5 billion to \$3.8 billion of cash for capital investment in property, plant and equipment and approximately \$1.1 billion of cash for dividends on our common stock (based on the assumptions described below under "Dividends").

For the 12 month period ending December 31, 2021, we project that our fixed commitments will include (i) \$125 million of scheduled term loan amortization payments, (ii) \$24 million of finance lease and other fixed payments and (iii) \$2.3 billion of debt maturities (excluding issuances made after December 31, 2020). We do not anticipate that the COVID-19 pandemic will interfere with our ability to discharge these obligations over the next year.

For additional information, see "Risk Factors—Financial Risks" in Item 1A of Part I of this report.

Capital Expenditures

We incur capital expenditures on an ongoing basis to expand and improve our service offerings, enhance and modernize our networks and compete effectively in our markets. We evaluate capital expenditure projects based on a variety of factors, including expected strategic impacts (such as forecasted impact on revenue growth, productivity, expenses, service levels and customer retention) and our expected return on investment. The amount of capital investment is influenced by, among other things, current and projected demand for our services and products, cash flow generated by operating activities, cash required for other purposes and regulatory considerations (such as our CAF Phase II or RDOF infrastructure buildout requirements).

Our capital expenditures continue to be focused on enhancing network operating efficiencies and supporting new service developments. For more information on our capital spending, see (i) "—Overview of Sources and uses of Cash" above, (ii) "Historical Information—Investing Activities" below and (iii) Item 1 of Part 1 of this report.

Debt and Other Financing Arrangements

Subject to market conditions, we expect to continue to issue debt securities from time to time in the future to refinance a substantial portion of our maturing debt, including issuing debt securities of certain of our subsidiaries to refinance their maturing debt to the extent feasible. The availability, interest rate and other terms of any new borrowings will depend on the ratings assigned by credit rating agencies, among other factors.

As of the date of this report, the credit ratings for the senior secured and unsecured debt of Lumen Technologies, Level 3 Financing, Inc. and Qwest Corporation were as follows:

Borrower	Moody's Investors Service, Inc.	Standard & Poor's	Fitch Ratings
Lumen Technologies:			
Unsecured	B2	BB-	BB
Secured	Ba3	BBB-	BB+
Level 3 Financing, Inc.:			
Unsecured	Ba3	BB	BB
Secured	Ba1	BBB-	BBB-
Qwest Corporation:			
Unsecured	Ba2	BBB-	BB+

Our credit ratings are reviewed and adjusted from time to time by the rating agencies. Any future downgrades of the senior unsecured or secured debt ratings of us or our subsidiaries could impact our access to capital or further raise our borrowing costs. See "Risk Factors—Financial Risks" in Item 1A of Part I of this report.

Net Operating Loss Carryforwards

As of December 31, 2020, Lumen Technologies had approximately \$5.1 billion of federal net operating loss carryforwards. ("NOLs"), which for U.S. federal income tax purposes can be used to offset future taxable income. These NOLs are primarily related to federal NOLs we acquired through the Level 3 acquisition on November 1, 2017 and are subject to limitations under Section 382 of the Internal Revenue Code and related U.S. Treasury Department regulations. We maintain a Section 382 rights agreement designed to safeguard through late 2023 our ability to use those NOLs. Assuming we can continue using these NOLs in the amounts projected, we expect to reduce our federal cash taxes for the next several years. The amounts of our near-term future tax payments will depend upon many factors, including our future earnings and tax circumstances and results of any corporate tax reform. Based on current laws and our current assumptions and projections, we estimate our cash income tax liability related to 2021 will be approximately \$100 million.

We cannot assure you we will be able to use our NOL carryforwards fully. See "Risk Factors—Financial Risks—We may not be able to fully utilize our NOLs" in Item 1A of Part I of this report.

Dividends

We currently expect to continue our current practice of paying quarterly cash dividends in respect of our common stock subject to our Board of Directors' discretion to modify or terminate this practice at any time and for any reason without prior notice. Our current quarterly common stock dividend rate is \$0.25 per share, as approved by our Board of Directors, which we believe is a dividend rate per share which enables us to balance our multiple objectives of managing our business, investing in the business, de-leveraging our balance sheet and returning a substantial portion of our cash to our shareholders. Assuming continued payment during 2021 at this rate of \$0.25 per share, our average total dividend paid each quarter would be approximately \$277 million based on the number of our current outstanding shares (which figure (i) assumes no increases or decreases in the number of shares, except in connection with the anticipated vesting of currently outstanding equity awards, and (ii) excludes dividend costs we periodically incur in connection with releasing dividend payments upon the vesting of equity incentive awards, which was \$31 million during the year ended December 31, 2020). See Risk Factors—Business Risks" in Item 1A of Part I of this report.

Revolving Facilities and Other Debt Instruments

At December 31, 2020, we had \$12.5 billion of outstanding consolidated secured indebtedness, \$19.3 billion of outstanding consolidated unsecured indebtedness and \$2.0 billion of unused borrowing capacity under our revolving credit facility, as discussed further below.

On January 31, 2020, we amended and restated our credit agreement dated June 19, 2017 (as so amended and restated, the "Amended Credit Agreement"). At December 31, 2020, we maintained senior secured credit facilities under the Amended Credit Agreement consisting of (i) a \$2.2 billion revolving credit facility, under which we owed \$150 million as of December 31, 2020, and (ii) \$6.4 billion of term loan facilities.

At December 31, 2020, we had \$97 million of letters of credit outstanding under our \$225 million uncommitted letter of credit facility.

Additionally, as of December 31, 2020, we had outstanding letters of credit, or other similar obligations, of approximately \$18 million of which \$11 million is collateralized by cash that is reflected on our consolidated balance sheets as restricted cash.

In addition to its indebtedness under the Amended Credit Agreement, Lumen Technologies is indebted under its outstanding senior notes, and several of its subsidiaries are indebted under separate credit facilities or senior notes.

For additional information on the terms and conditions of our consolidated debt instruments, including financial and operating covenants, see Note 6—Long-Term Debt and Credit Facilities. For a discussion of certain intercompany obligations, see "—Other Matters."

Future Contractual Obligations

Our estimated future obligations as of December 31, 2020 include both current and long term obligations. For our long-term debt as noted in Note 6—Long-Term Debt and Credit Facilities, we have a current obligation of \$2.4 billion and a long-term obligation of \$29.7 billion. Under our operating leases as noted in Note 4—Leases, we have a current obligation of \$469 million and a long-term obligation of \$1.7 billion. As noted in Note 17—Commitments, Contingencies and Other Items, we have a current obligations related to right-of-way agreements and purchase commitments of \$624 million and a long-term obligation of \$1.6 billion. Additionally, we have a current obligation for asset retirement obligation of \$28 million and a long-term obligation of \$171 million. Finally, our pension and post-retirement benefit plans have a current obligation of \$232 million and a long-term obligation of \$4.5 billion.

Pension and Post-retirement Benefit Obligations

We are subject to material obligations under our existing defined benefit pension plans and post-retirement benefit plans. At December 31, 2020, the accounting unfunded status of our qualified and non-qualified defined benefit pension plans and our qualified post-retirement benefit plans was \$1.7 billion and \$3.0 billion, respectively. For additional information about our pension and post-retirement benefit arrangements, see "Critical Accounting Policies and Estimates - Pensions and Post-Retirements Benefits" in Item 7 of Part II of this report and see Note 10—Employee Benefits.

Benefits paid by our qualified pension plan are paid through a trust that holds all of the plan's assets. Based on current laws and circumstances, we do not expect any contributions to be required for our qualified pension plan during 2021. The amount of required contributions to our qualified pension plan in 2022 and beyond will depend on a variety of factors, most of which are beyond our control, including earnings on plan investments, prevailing interest rates, demographic experience, changes in plan benefits and changes in funding laws and regulations. We occasionally make voluntary contributions in addition to required contributions. We last made a voluntary contribution to the trust for our qualified pension plan during 2018. Based on current laws and circumstances, we do not anticipate making a voluntary contribution to the trust for our qualified pension plan in 2021.

Substantially all of our post-retirement health care and life insurance benefits plans are unfunded and are paid by us with available cash. In the past, we maintained several trusts that helped cover some of those costs, but the trust funds are almost completely depleted and currently cover an immaterial amount of our annual plan costs. As described further in Note 10—Employee Benefits, aggregate benefits paid by us under these plans (net of participant contributions and direct subsidy receipts) were \$211 million, \$241 million and \$249 million for the years ended December 31, 2020, 2019 and 2018, respectively. For additional information on our expected future benefits payments for our post-retirement benefit plans, please see Note 10—Employee Benefits.

The capital markets have been volatile during 2020, primarily as a result of uncertainties related to the COVID-19 outbreak. U.S. federal governmental actions to stimulate the economy have significantly impacted interest rates. These events could ultimately affect the funding levels of our pension plans and calculations of our liabilities under our pension and other post-employment benefit plans.

For 2020, our expected annual long-term rates of return on the pension plan and post-retirements health care and life insurance benefit plan assets, net of administrative expenses, were 6.0% and 4.0%, respectively. For 2021, our expected annual long-term rates of return on these assets are 5.5% and 4.0%, respectively. However, actual returns could be substantially different.

Our pension plan contains provisions that allow us, from time to time, to offer lump sum payment options to certain former employees in settlement of their future retirement benefits. We record an accounting settlement charge, consisting of the recognition of certain deferred costs of the pension plan, associated with these lump sum payments only if, in the aggregate, they exceed the sum of the annual service and interest costs for the plan's net periodic pension benefit cost, which represents the settlement accounting threshold. As of December 31, 2020, the settlement threshold was not reached. In the event of workforce reductions in the future, the annual lump sum payments may trigger settlement accounting.

Connect America Fund & Rural Digital Opportunity Fund

Since 2015, we have been receiving over \$500 million annually through Phase II of the CAF, a program that will end this year. In connection with the CAF funding, we must meet certain specified infrastructure buildout requirements in 33 states which requires substantial capital expenditures. While we are on track to meet the requirements this year, we cannot provide any assurances that we will be able to timely meet our mandated buildout requirements. In accordance with the FCC's January 2020 order, we elected to receive an additional year of CAF Phase II funding in 2021.

In early 2020, the FCC created the RDOF, which is a new federal support program designed to replace the CAF Phase II program. On December 7, 2020, the FCC allocated in its RDOF Phase I auction \$9.2 billion in support payments over 10 years to deploy high speed broadband to over 5.2 million unserved locations. We won bids for RDOF Phase I support payments of \$26 million, annually. These RDOF Phase I support payments are expected to begin January 1, 2022.

For additional information on these programs, see "Business—Regulation" in Item 1 of Part I of this report and see "Risk Factors—Financial Risks" in Item 1A of Part I of this report.

Historical Information

The following tables summarize our consolidated cash flow activities:

	Years Ended December 31,		Increase /
	2020	2019	(Decrease)
	(Dollars in millions)		
Net cash provided by operating activities	\$ 6,524	6,680	(156)
Net cash used in investing activities	(3,564)	(3,570)	(6)
Net cash used in financing activities	(4,250)	(1,911)	2,339

	Years Ended December 31,		Increase /
	2019	2018	(Decrease)
	(Dollars in millions)		
Net cash provided by operating activities	\$ 6,680	7,032	(352)
Net cash used in investing activities	(3,570)	(3,078)	492
Net cash used in financing activities	(1,911)	(4,023)	(2,112)

Operating Activities

Net cash provided by operating activities decreased by \$156 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to increased payments on accounts payable and other current liabilities, increases in cash payments for retirement benefits and increases in payments for prepaid assets, partially offset by increased collections on accounts receivable. Cash provided by operating activities is subject to variability period over period as a result of timing differences, including with respect to the collection of receivables and payments of interest expense, accounts payable and bonuses.

Net cash provided by operating activities decreased by \$352 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018 primarily due to an increase in net loss after adjusting for non-cash items, increases in payments on accounts payable and other noncurrent liabilities and increases in payments for prepaid assets, primarily offset by a decrease in retirement benefit contributions.

For additional information about our operating results, see "Results of Operations" above.

Investing Activities

Net cash used in investing activities decreased by \$6 million for the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to an increase in proceeds from the sale of property, plant and equipment and other assets, partially offset by an increase in capital expenditures.

Net cash used in investing activities increased by \$492 million for the year ended December 31, 2019 as compared to the year ended December 31, 2018. The change in investing activities is primarily due to increased capital expenditures on property, plant and equipment and decreased proceeds from the sale of property, plant and equipment and other assets.

Financing Activities

Net cash used in financing activities increased by \$2.3 billion for the year ended December 31, 2020 as compared to the year ended December 31, 2019 primarily due to an increase in payments of long-term debt, partially offset by increases in net proceeds from issuance of long-term debt and net proceeds from our revolving line of credit.

Net cash used in financing activities decreased by \$2.1 billion for the year ended December 31, 2019 as compared to the year ended December 31, 2018 primarily due to net proceeds from the issuance of long-term debt and the decrease in dividends paid, partially offset by higher levels of payments on our long-term debt and revolving line of credit.

See Note 6—Long-Term Debt and Credit Facilities for additional information on our outstanding debt securities.

Other Matters

We have cash management and loan arrangements with a majority of our income-generating subsidiaries, in which a substantial portion of the aggregate cash of those subsidiaries' is periodically advanced or loaned to us or our service company affiliate. Although we periodically repay these advances to fund the subsidiaries' cash requirements throughout the year, at any given point in time we may owe a substantial sum to our subsidiaries under these arrangements. In accordance with generally accepted accounting principles, these arrangements are reflected in the balance sheets of our subsidiaries, but are eliminated in consolidation and therefore not recognized on our consolidated balance sheets.

We also are involved in various legal proceedings that could substantially impact our financial position. See Note 17—Commitments, Contingencies and Other Items for additional information.

Market Risk

As of December 31, 2020, we are exposed to market risk from changes in interest rates on our variable rate long-term debt obligations and fluctuations in certain foreign currencies. We seek to maintain a favorable mix of fixed and variable rate debt in an effort to limit interest costs and cash flow volatility resulting from changes in rates.

Management periodically reviews our exposure to interest rate fluctuations and periodically implements strategies to manage the exposure. From time to time, we have used derivative instruments to (i) swap our exposure to changing variable interest rates for fixed interest rates or (ii) to swap obligations to pay fixed interest rates for variable interest rates. We have established policies and procedures for risk assessment and the approval, reporting and monitoring of derivative instrument activities. As of December 31, 2020, we did not hold or issue derivative financial instruments for trading or speculative purposes.

In 2019, we executed swap transactions that reduced our exposure to floating rates with respect to \$4.0 billion principal amount of floating rate debt. See Note 14—Derivative Financial Instruments for additional disclosure regarding our hedging arrangements.

As of December 31, 2020, we had approximately \$9.9 billion floating rate debt potentially subject to LIBOR, \$4.0 billion of which was subject to the above-described hedging arrangements. A hypothetical increase of 100 basis points in LIBOR relating to our \$5.9 billion of unhedged floating rate debt would, among other things, decrease our annual pre-tax earnings by approximately \$59 million.

We conduct a portion of our business in currencies other than the U.S. dollar, the currency in which our consolidated financial statements are reported. Our European subsidiaries and certain Latin American subsidiaries use the local currency as their functional currency, as the majority of their revenue and purchases are transacted in their local currencies. Certain Latin American countries previously designated as highly inflationary economies use the U.S. dollar as their functional currency. Although we continue to evaluate strategies to mitigate risks related to the effect of fluctuations in currency exchange rates, we will likely recognize gains or losses from international transactions. Accordingly, changes in foreign currency rates relative to the U.S. dollar could adversely impact our operating results.

Certain shortcomings are inherent in the method of analysis presented in the computation of exposures to market risks. Actual values may differ materially from those disclosed by us from time to time if market conditions vary from the assumptions used in the analyses performed. These analyses only incorporate the risk exposures that existed at December 31, 2020.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The information in "Management's Discussion and Analysis of Financial Condition and Results of Operations—Market Risk" in Item 7 of Part II of this report is incorporated herein by reference.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Lumen Technologies, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Lumen Technologies, Inc. and subsidiaries (the Company) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated February 25, 2021 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Changes in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for the presentation of taxes assessed by a governmental authority as of January 1, 2020.

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Codification Topic 842, Leases.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate 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 critical audit matters 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 matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Testing of revenue

As discussed in Note 3 to the consolidated financial statements, the Company recorded \$20.7 billion of operating revenues for the year ended December 31, 2020. 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 revenue as a critical audit matter. Complex auditor judgment was required in evaluating the sufficiency of audit evidence over revenue due to the large volume of data and the number and complexity of the revenue accounting systems. Specialized skills and knowledge were needed to test the IT systems used for the processing and recording of revenue.

The following are the primary procedures we performed to address this critical audit matter. We applied auditor judgment to determine the nature and extent of procedures to be performed over the processing and recording of revenue, including the IT systems tested. We evaluated the design and tested the operating effectiveness of certain internal controls related to the processing and recording of revenue. This included manual and automated controls over the IT systems used for the processing and recording of revenue. For a selection of transactions, we compared the amount of revenue recorded to a combination of Company internal data, executed contracts, and other relevant third-party data. In addition, we involved IT professionals with specialized skills and knowledge who assisted in the design and performance of audit procedures related to certain IT systems used by the Company for the processing and recording of revenue. We evaluated the sufficiency of audit evidence obtained by assessing the results of procedures performed, including the relevance and reliability of evidence obtained.

Assessment of the Company's impairment testing related to the carrying value of goodwill

As discussed in Note 2 to the consolidated financial statements, the goodwill balance at December 31, 2020 was \$18.9 billion. The Company assesses goodwill for impairment annually and when events or circumstances indicate the fair value of a reporting unit may be below its carrying value. On the annual goodwill impairment assessment date, the Company estimated the fair value of its reporting units by considering both a discounted cash flow method and a market approach. The impairment test determined the carrying values of the consumer, wholesale, small and medium business, and EMEA reporting units exceeded their estimated fair values. As a result, the Company recorded a non-cash impairment charge of \$2.6 billion to reduce the carrying value of goodwill for the consumer, wholesale, small and medium business, and EMEA reporting units.

We identified the assessment of the Company's impairment testing related to the carrying value of goodwill as a critical audit matter. Subjective auditor judgment was required in evaluating certain assumptions used to estimate the fair value of the reporting units. Those assumptions included: projected cash flows, terminal growth rates, discount rates, and market multiples for revenue and EBITDA. The evaluation of these assumptions was challenging due to the subjective nature of the assumptions. Additionally, differences in judgment used to determine these assumptions could have a significant effect on each reporting unit's estimated fair value. Specialized skills and knowledge were required in the assessment of the terminal growth rates, discount rates, and market multiples for revenue and EBITDA.

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 related to the impairment testing of goodwill. This included controls related to the Company's development of projected cash flows, and the determination of terminal growth rates, discount rates, and market multiples for revenue and EBITDA. We performed sensitivity analyses over the projected cash flows assumptions to assess the impact on the Company's estimate of the fair value of each reporting unit. We assessed the Company's ability to accurately project cash flows by comparing the Company's historical cash flow projections to actual results. We also evaluated the Company's projected cash flows by comparing them to the Company's underlying business strategies, historic trends, and publicly available industry and analyst reports. We involved a valuation professional with specialized skills and knowledge, who assisted in:

- comparing the selected revenue and EBITDA market multiples to peer companies' results
- comparing the selected terminal growth rate for each reporting unit to the Company's historic trends and growth expectations developed using publicly available industry and analyst reports
- evaluating the discount rates by comparing them to discount rate ranges that were independently developed using publicly available market data for comparable entities.

Assessment of the estimate of the fair value of private fund interests valued using net asset value

As discussed in Note 10 to the consolidated financial statements, the fair value of pension plan assets at December 31, 2020 was \$10.5 billion. Of this amount, \$3.4 billion represents the fair value of private fund interests estimated by the Company using net asset value (NAV). Valuation inputs for these private fund interests are generally based on assumptions and other information not observable in the market.

We identified the assessment of the estimate of the fair value of private fund interests estimated using NAV as a critical audit matter. Auditor judgment was required in the application and performance of procedures to assess the fair value because the determination of NAV of private fund interests involves the use of unobservable inputs.

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 related to the estimate of the fair value of private fund interests estimated using NAV. This included controls related to the Company's process to monitor and record the estimated fair value of the pension plan assets. For a sample of private fund interests, we compared:

- the Company's previous estimates of fair value of NAV to the NAVs subsequently audited by third parties
- the rates of return of the private fund interests to relevant, publicly available market indices
- the estimated fair values of NAV to external confirmations received from the third-party investment managers.

We involved valuation professionals with specialized skills and knowledge, who assisted in our risk assessment and the design of procedures performed for private fund interests. With respect to private fund interest selections tested, the valuation professionals assessed the sufficiency of audit evidence obtained by assessing the result of procedures performed.

/s/ KPMG LLP

We have served as the Company's auditor since 1977.

Denver, Colorado
February 25, 2021

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors Lumen Technologies, Inc.:

Opinion on Internal Control Over Financial Reporting

We have audited Lumen Technologies, Inc. and subsidiaries' (the Company) internal control over financial reporting as of December 31, 2020, 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 Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2020, and the related notes (collectively, the consolidated financial statements), and our report dated February 25, 2021 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible 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 internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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.

/s/ KPMG LLP
Denver, Colorado
February 25, 2021

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions, except per share amounts, and shares in thousands)		
OPERATING REVENUE	\$ 20,712	21,458	22,580
OPERATING EXPENSES			
Cost of services and products (exclusive of depreciation and amortization)	8,934	9,134	9,999
Selling, general and administrative	3,464	3,715	4,165
Depreciation and amortization	4,710	4,829	5,120
Goodwill impairment	2,642	6,506	2,726
Total operating expenses	19,750	24,184	22,010
OPERATING INCOME (LOSS)	962	(2,726)	570
OTHER (EXPENSE) INCOME			
Interest expense	(1,668)	(2,021)	(2,177)
Other (expense) income, net	(76)	(19)	44
Total other expense, net	(1,744)	(2,040)	(2,133)
LOSS BEFORE INCOME TAX EXPENSE	(782)	(4,766)	(1,563)
Income tax expense	450	503	170
NET LOSS	\$ (1,232)	(5,269)	(1,733)
BASIC AND DILUTED LOSS PER COMMON SHARE			
BASIC	\$ (1.14)	(4.92)	(1.63)
DILUTED	\$ (1.14)	(4.92)	(1.63)
WEIGHTED AVERAGE COMMON SHARES OUTSTANDING			
BASIC	1,079,130	1,071,441	1,065,866
DILUTED	1,079,130	1,071,441	1,065,866

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
NET LOSS	\$ (1,232)	(5,269)	(1,733)
OTHER COMPREHENSIVE LOSS:			
Items related to employee benefit plans:			
Change in net actuarial (loss) gain, net of, \$26, \$60, and \$(45) tax	(92)	(195)	133
Change in net prior service cost, net of \$(12), \$(4), and \$(3) tax	33	13	9
Curtailment loss, net of \$(1), \$—, and \$— tax	3	—	—
Reclassification of realized loss on interest rate swaps to net income, net of \$(16), \$—, and \$— tax	46	2	—
Unrealized holding loss on interest rate swaps, net of \$29, \$12, and \$— tax	(86)	(41)	—
Foreign currency translation adjustment, net of \$(43), \$(6), and \$50 tax	(37)	2	(201)
Other comprehensive loss	(133)	(219)	(59)
COMPREHENSIVE LOSS	\$ (1,365)	(5,488)	(1,792)

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
	2020	2019
	(Dollars in millions and shares in thousands)	
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	\$ 406	1,690
Accounts receivable, less allowance of \$191 and \$106	1,962	2,259
Other	808	819
Total current assets	3,176	4,768
Property, plant and equipment, net of accumulated depreciation of \$31,596 and \$29,346	26,338	26,079
GOODWILL AND OTHER ASSETS		
Goodwill	18,870	21,534
Other intangible assets, net	8,219	9,567
Other, net	2,791	2,794
Total goodwill and other assets	29,880	33,895
TOTAL ASSETS	\$ 59,394	64,742
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Current maturities of long-term debt	\$ 2,427	2,300
Accounts payable	1,134	1,724
Accrued expenses and other liabilities		
Salaries and benefits	1,008	1,037
Income and other taxes	314	311
Current operating lease liabilities	379	416
Interest	291	280
Other	328	386
Current portion of deferred revenue	753	804
Total current liabilities	6,634	7,258
LONG-TERM DEBT	29,410	32,394
DEFERRED CREDITS AND OTHER LIABILITIES		
Deferred income taxes, net	3,342	2,918
Benefit plan obligations, net	4,556	4,594
Other	4,290	4,108
Total deferred credits and other liabilities	12,188	11,620
COMMITMENTS AND CONTINGENCIES (Note 17)		
STOCKHOLDERS' EQUITY		
Preferred stock — non-redeemable, \$25.00 par value, authorized 2,000 and 2,000 shares, issued and outstanding 7 and 7 shares	—	—
Common stock, \$1.00 par value, authorized 2,200,000 and 2,200,000 shares, issued and outstanding 1,096,921 and 1,090,058 shares	1,097	1,090
Additional paid-in capital	20,909	21,874
Accumulated other comprehensive loss	(2,813)	(2,680)
Accumulated deficit	(8,031)	(6,814)
Total stockholders' equity	11,162	13,470
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 59,394	64,742

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
OPERATING ACTIVITIES			
Net loss	\$ (1,232)	(5,269)	(1,733)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Depreciation and amortization	4,710	4,829	5,120
Goodwill impairment	2,642	6,506	2,746
Deferred income taxes	366	440	522
Provision for uncollectible accounts	189	145	153
Net loss (gain) on early retirement and modification of debt	105	(72)	7
Share-based compensation	175	162	186
Changes in current assets and liabilities:			
Accounts receivable	115	(5)	25
Accounts payable	(543)	(261)	124
Accrued income and other taxes	27	20	75
Other current assets and liabilities, net	(262)	(32)	127
Retirement benefits	(111)	(12)	(667)
Changes in other noncurrent assets and liabilities, net	246	245	329
Other, net	97	(16)	18
Net cash provided by operating activities	6,524	6,680	7,032
INVESTING ACTIVITIES			
Capitalized expenditures	(3,729)	(3,628)	(3,175)
Proceeds from sale of property, plant and equipment and other assets	153	93	158
Other, net	12	(35)	(61)
Net cash used in investing activities	(3,564)	(3,570)	(3,078)
FINANCING ACTIVITIES			
Net proceeds from issuance of long-term debt	4,361	3,707	130
Payments of long-term debt	(7,315)	(4,157)	(1,936)
Net (payments) proceeds on credit facility and revolving line of credit	(100)	(300)	145
Dividends paid	(1,109)	(1,100)	(2,312)
Other, net	(87)	(61)	(50)
Net cash used in financing activities	(4,250)	(1,911)	(4,023)
Net (decrease) increase in cash, cash equivalents and restricted cash	(1,290)	1,199	(69)
Cash, cash equivalents and restricted cash at beginning of period	1,717	518	587
Cash, cash equivalents and restricted cash at end of period	\$ 427	1,717	518
Supplemental cash flow information:			
Income taxes received, net	\$ 28	34	674
Interest paid (net of capitalized interest of \$75, \$72 and \$53)	\$ (1,627)	(2,028)	(2,138)
Cash, cash equivalents and restricted cash:			
Cash and cash equivalents	\$ 406	1,690	488
Restricted cash - current	3	3	4
Restricted cash - noncurrent	18	24	26
Total	\$ 427	1,717	518

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions except per share amounts)		
COMMON STOCK			
Balance at beginning of period	\$ 1,090	1,080	1,069
Issuance of common stock through dividend reinvestment, incentive and benefit plans	7	10	11
Balance at end of period	1,097	1,090	1,080
ADDITIONAL PAID-IN CAPITAL			
Balance at beginning of period	21,874	22,852	23,314
Issuance of common stock to acquire Level 3, including replacement of Level 3's share-based compensation awards	—	—	(2)
Shares withheld to satisfy tax withholdings	(40)	(37)	(56)
Share-based compensation and other, net	187	163	187
Dividends declared	(1,112)	(1,104)	(586)
Acquisition of additional minority interest in a subsidiary	—	—	(5)
Balance at end of period	20,909	21,874	22,852
ACCUMULATED OTHER COMPREHENSIVE LOSS			
Balance at beginning of period	(2,680)	(2,461)	(1,995)
Cumulative effect of adoption of ASU 2018-02, <i>Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income</i>	—	—	(407)
Other comprehensive loss	(133)	(219)	(59)
Balance at end of period	(2,813)	(2,680)	(2,461)
RETAINED EARNINGS (ACCUMULATED DEFICIT)			
Balance at beginning of period	(6,814)	(1,643)	1,103
Cumulative effect of adoption of ASU 2016-13, Measurement of Credit Losses, net of \$(2) tax	9	—	—
Cumulative effect of adoption of ASU 2016-02, Leases, net of \$(37) tax	—	96	—
Cumulative net effect of adoption of ASU 2014-09, Revenue from Contracts with Customers, net of \$(119) tax	—	—	338
Cumulative effect of adoption of ASU 2018-02, <i>Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income</i>	—	—	407
Net loss	(1,232)	(5,269)	(1,733)
Dividends declared and other	6	2	(1,758)
Balance at end of period	(8,031)	(6,814)	(1,643)
TOTAL STOCKHOLDERS' EQUITY	\$ 11,162	13,470	19,828
DIVIDENDS DECLARED PER COMMON SHARE	\$ 1.00	1.00	2.16

See accompanying notes to consolidated financial statements.

LUMEN TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

References in the Notes to "Lumen Technologies, Inc.", "Lumen Technologies" or "Lumen," "we," "us", the "Company", and "our" refer to Lumen Technologies and its consolidated subsidiaries, unless the content otherwise requires. References in the Notes to "Level 3" refer to Level 3 Parent, LLC and its predecessor, Level 3 Communications, Inc., which we acquired on November 1, 2017.

(1) Background and Summary of Significant Accounting Policies

General

We are an international facilities-based technology and communications company engaged primarily in providing a broad array of integrated services to our business and residential customers.

Basis of Presentation

The accompanying consolidated financial statements include our accounts and the accounts of our subsidiaries in which we have a controlling interest. Intercompany amounts and transactions with our consolidated subsidiaries have been eliminated. In connection with our acquisition of Level 3 in 2017, we acquired its deconsolidated Venezuela subsidiary and due to exchange restrictions and other conditions have assigned no value to this subsidiary's assets. Additionally, we have excluded this subsidiary from our consolidated financial statements.

To simplify the overall presentation of our consolidated financial statements, we report immaterial amounts attributable to noncontrolling interests in certain of our subsidiaries as follows: (i) income attributable to noncontrolling interests in other income, net, (ii) equity attributable to noncontrolling interests in additional paid-in capital and (iii) cash flows attributable to noncontrolling interests in other, net financing activities.

We reclassified certain prior period amounts to conform to the current period presentation, including the categorization of our revenue and our segment reporting for 2020, 2019 and 2018. See Note 16—Segment Information for additional information. These changes had no impact on total operating revenue, total operating expenses or net loss for any period.

Operating Expenses

Our current definitions of operating expenses are as follows:

- *Cost of services and products (exclusive of depreciation and amortization)* are expenses incurred in providing products and services to our customers. These expenses include: employee-related expenses directly attributable to operating and maintaining our network (such as salaries, wages, benefits and professional fees); facilities expenses (which include third-party telecommunications expenses we incur for using other carriers' networks to provide services to our customers); rents and utilities expenses; equipment sales expenses (such as data integration and modem expenses); and other expenses directly related to our operations; and
- *Selling, general and administrative expenses* are corporate overhead and other operating expenses. These expenses include: employee-related expenses (such as salaries, wages, internal commissions, benefits and professional fees) directly attributable to selling products or services and employee-related expenses for administrative functions; marketing and advertising; property and other operating taxes and fees; external commissions; litigation expenses associated with general matters; bad debt expense; and other selling, general and administrative expenses.

These expense classifications may not be comparable to those of other companies.

Summary of Significant Accounting Policies

Use of Estimates

Our consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles. These accounting principles require us to make certain estimates, judgments and assumptions. We believe that the estimates, judgments and assumptions we make when accounting for specific items and matters are reasonable, based on information available at the time they are made. These estimates, judgments and assumptions can materially affect the reported amounts of assets, liabilities and components of stockholders' equity as of the dates of the consolidated balance sheets, as well as the reported amounts of revenue, expenses and components of cash flows during the periods presented in our other consolidated financial statements. We also make estimates in our assessments of potential losses in relation to threatened or pending tax and legal matters. See Note 15—Income Taxes and Note 17—Commitments, Contingencies and Other Items for additional information.

For matters not related to income taxes, if a loss is considered probable and the amount can be reasonably estimated, we recognize an expense for the estimated loss. If we have the potential to recover a portion of the estimated loss from a third party, we make a separate assessment of recoverability and reduce the estimated loss if recovery is also deemed probable.

For matters related to income taxes, if we determine that the impact of an uncertain tax position is more likely than not to be sustained upon audit by the relevant taxing authority, then we recognize a benefit for the largest amount that is more likely than not to be sustained. No portion of an uncertain tax position will be recognized if the position has less than a 50% likelihood of being sustained. Interest is recognized on the amount of unrecognized benefit from uncertain tax positions.

For all of these and other matters, actual results could differ materially from our estimates.

Revenue Recognition

We earn most of our consolidated revenue from contracts with customers, primarily through the provision of communications and other services. Revenue from contracts with customers is accounted for under Accounting Standards Codification ("ASC") 606. We also earn revenue from leasing arrangements (primarily fiber capacity agreements) and governmental subsidy payments, neither of which are accounted for under ASC 606.

Revenue is recognized when control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to receive in exchange for those goods or services. Revenue is recognized based on the following five-step model:

- Identification of the contract with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and
- Recognition of revenue when, or as, we satisfy a performance obligation.

We provide an array of communications services to business and residential customers, including local voice, VPN, Ethernet, data, broadband, private line (including special access), network access, transport, voice, information technology, video and other ancillary services. We provide these services to a wide range of businesses, including global, enterprise, wholesale, government, small and medium business customers. Certain contracts also include the sale of equipment, which is not significant to our business.

We recognize revenue for services when we provide the applicable service or when control of a product is transferred. Recognition of certain payments received in advance of services being provided is deferred. These advance payments include certain activation and certain installation charges. If the activation and installation charges are not separate performance obligations, we recognize them as revenue over the actual or expected contract term using historical experience, which ranges from one year to five years depending on the service. In most cases, termination fees or other fees on existing contracts that are negotiated in conjunction with new contracts are deferred and recognized over the new contract term.

For access services, we generally bill fixed monthly charges one month in advance to customers and recognize revenue as service is provided over the contract term in alignment with the customer's receipt of service. For usage and other ancillary services, we generally bill in arrears and recognize revenue as usage or delivery occurs. In most cases, the amount invoiced for our service offerings constitutes the price that would be billed on a standalone basis.

In certain cases, customers may be permitted to modify their contracts. We evaluate the change in scope or price to identify whether the modification should be treated as a separate contract, whether the modification is a termination of the existing contract and creation of a new contract, or if it is a change to the existing contract.

Customer contracts are evaluated to determine whether the performance obligations are separable. If the performance obligations are deemed separable and separate earnings processes exist, the total transaction price that we expect to receive with the customer is allocated to each performance obligation based on its relative standalone selling price. The revenue associated with each performance obligation is then recognized as earned.

We periodically sell optical capacity on our network. These transactions are structured as indefeasible rights of use, commonly referred to as IRUs, which are the exclusive right to use a specified amount of capacity or fiber for a specified term, typically 10 to 20 years. In most cases, we account for the cash consideration received on transfers of optical capacity as ASC 606 revenue which is adjusted for the time value of money and is recognized ratably over the term of the agreement. Cash consideration received on transfers of dark fiber is accounted for as non-ASC 606 lease revenue, which we also recognize ratably over the term of the agreement. We do not recognize revenue on any contemporaneous exchanges of our optical capacity assets for other non-owned optical capacity assets.

In connection with offering products and services provided to the end user by third-party vendors, we review the relationship between us, the vendor and the end user to assess whether revenue should be reported on a gross or net basis. In assessing whether revenue should be reported on a gross or net basis, we consider whether we act as a principal in the transaction and control the goods and services used to fulfill the performance obligations associated with the transaction.

We have service level commitments pursuant to contracts with certain of our customers. To the extent that such service levels are not achieved or are otherwise disputed due to performance or service issues or other service interruptions or conditions, we will estimate the amount of credits to be issued and record a corresponding reduction to revenue in the period that the service level commitment was not met.

Customer payments are made based on billing schedules included in our customer contracts, which is typically on a monthly basis.

We defer (or capitalize) incremental contract acquisition and fulfillment costs and recognize (or amortize) such costs over the average contract life. Our deferred contract costs for our customers have average amortization periods of approximately 30 months for consumer and business customers. These deferred costs are monitored every period to reflect any significant change in assumptions.

See Note 3—Revenue Recognition for additional information.

Advertising Costs

Costs related to advertising are expensed as incurred and included in selling, general and administrative expenses in our consolidated statements of operations. Our advertising expense was \$56 million, \$62 million and \$98 million for the years ended December 31, 2020, 2019 and 2018, respectively.

Legal Costs

In the normal course of our business, we incur costs to hire and retain external legal counsel to advise us on regulatory, litigation and other matters. We expense these costs as the related services are received.

Income Taxes

We file a consolidated federal income tax return with our eligible subsidiaries. The provision for income taxes consists of an amount for taxes currently payable, an amount for tax consequences deferred to future periods and adjustments to our liabilities for uncertain tax positions. We record deferred income tax assets and liabilities reflecting future tax consequences attributable to tax net operating loss carryforwards ("NOLs"), tax credit carryforwards and differences between the financial statement carrying value of assets and liabilities and the tax basis of those assets and liabilities. Deferred taxes are computed using enacted tax rates expected to apply in the year in which the differences are expected to affect taxable income. The effect on deferred income tax assets and liabilities of a change in tax rate is recognized in earnings in the period that includes the enactment date.

We establish valuation allowances when necessary to reduce deferred income tax assets to the amounts that we believe are more likely than not to be recovered. Each quarter we evaluate the need to retain all or a portion of the valuation allowance on our deferred tax assets. See Note 15—Income Taxes for additional information.

Cash and Cash Equivalents

Cash and cash equivalents include highly liquid investments that are readily convertible into cash and are not subject to significant risk from fluctuations in interest rates. As a result, the value at which cash and cash equivalents are reported in our consolidated financial statements approximates their fair value. In evaluating investments for classification as cash equivalents, we require that individual securities have original maturities of ninety days or less and that individual investment funds have dollar-weighted average maturities of ninety days or less. To preserve capital and maintain liquidity, we invest with financial institutions we deem to be of sound financial condition and in high quality and relatively risk-free investment products. Our cash investment policy limits the concentration of investments with specific financial institutions or among certain products and includes criteria related to credit worthiness of any particular financial institution.

Book overdrafts occur when we have issued checks but they have not yet been presented to our controlled disbursement bank accounts for payment. Disbursement bank accounts allow us to delay funding of issued checks until the checks are presented for payment. Until the issued checks are presented for payment, the book overdrafts are included in accounts payable on our consolidated balance sheet. This activity is included in the operating activities section in our consolidated statements of cash flows. There were no book overdrafts included in accounts payable at December 31, 2020. Included in accounts payable at December 31, 2019 was \$106 million representing book overdrafts.

Restricted Cash

Restricted cash consists primarily of cash and investments that serve to collateralize our outstanding letters of credit and certain performance and operating obligations. Restricted cash and securities are recorded as current or non-current assets in the consolidated balance sheets depending on the duration of the restriction and the purpose for which the restriction exists. Restricted securities are stated at cost which approximates fair value as of December 31, 2020 and 2019.

Accounts Receivable and Allowance for Credit Losses

Accounts receivable are recognized based upon the amount due from customers for the services provided or at cost for purchased and other receivables, less an allowance for credit losses. Prior to the adoption of ASU 2016-13, the allowance for credit losses receivable reflected our best estimate of probable losses inherent in our receivable portfolio determined on the basis of historical experience, specific allowances for known troubled accounts and other currently available evidence. We implemented the new standard effective January 1, 2020, as discussed in the *Recently Adopted Accounting Pronouncements* - "Measurement of Credit Losses on Financial Instruments", below. For more information, see Note 5—Credit Losses on Financial Instruments.

The carrying value of accounts receivable net of the allowance for credit losses approximates fair value. Accounts receivable balances acquired in a business combination are recorded at fair value for all balances receivable at the acquisition date and at the invoiced amount for those amounts invoiced after the acquisition date.

Property, Plant and Equipment

We record property, plant and equipment acquired in connection with our acquisitions based on its estimated fair value as of its acquisition date plus the estimated value of any associated legally or contractually required retirement obligations. We record purchased and constructed property, plant and equipment at cost, plus the estimated value of any associated legally or contractually required retirement obligations. We depreciate the majority of our property, plant and equipment using the straight-line group method, but depreciate certain of our assets using the straight-line method over their estimated useful lives of the specific asset. Under the straight-line group method, assets dedicated to providing telecommunications services (which comprise the majority of our property, plant and equipment) that have similar physical characteristics, use and expected useful lives are pooled for purposes of depreciation and tracking. The equal life group procedure is used to establish each pool's average remaining useful life. Generally, under the straight-line group method, when an asset is sold or retired in the course of normal business activities, the cost is deducted from property, plant and equipment and charged to accumulated depreciation without recognition of a gain or loss. A gain or loss is recognized in our consolidated statements of operations only if a disposal is unusual. Leasehold improvements are amortized over the shorter of the useful lives of the assets or the expected lease term. Expenditures for maintenance and repairs are expensed as incurred. Interest is capitalized during the construction phase of network and other internal-use capital projects. Employee-related costs for construction of network and other internal use assets are also capitalized during the construction phase. Property, plant and equipment supplies used internally are carried at average cost, except for significant individual items which are carried at actual cost.

We perform annual internal reviews to evaluate the reasonableness of the depreciable lives for our property, plant and equipment. Our reviews utilize models that take into account actual usage, physical wear and tear, replacement history, assumptions about technology evolution and, in certain instances, actuarially determined probabilities to estimate the remaining useful life of our asset base. Our remaining useful life assessments evaluate the possible loss in service value of assets that may precede the physical retirement. Assets shared among many customers may lose service value as those customers reduce their use of the asset. However, the asset is not retired until all customers no longer utilize the asset and we determine there is no alternative use for the asset.

We have asset retirement obligations associated with the legally or contractually required removal of a limited group of property, plant and equipment assets from leased properties and the disposal of certain hazardous materials present in our owned properties. When an asset retirement obligation is identified, usually in association with the acquisition of the asset, we record the fair value of the obligation as a liability. The fair value of the obligation is also capitalized as property, plant and equipment and then amortized over the estimated remaining useful life of the associated asset. Where the removal obligation is not legally binding, the net cost to remove assets is expensed in the period in which the costs are actually incurred.

We review long-lived tangible assets for impairment whenever facts and circumstances indicate that the carrying amounts of the assets may not be recoverable. For assessment purposes, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities, absent a material change in operations. An impairment loss is recognized only if the carrying amount of the asset group is not recoverable and exceeds its estimated fair value. Recoverability of the asset group to be held and used is assessed by comparing the carrying amount of the asset group to the estimated undiscounted future net cash flows expected to be generated by the asset group. If the asset group's carrying value is not recoverable, we recognize an impairment charge for the amount by which the carrying amount of the asset group exceeds its estimated fair value.

Goodwill, Customer Relationships and Other Intangible Assets

Intangible assets arising from business combinations, such as goodwill, customer relationships, capitalized software, trademarks and trade names, are initially recorded at estimated fair value. We amortize customer relationships primarily over an estimated life of 7 to 15 years, using either the sum-of-years-digits or the straight-line methods, depending on the type of customer. We amortize capitalized software using the straight-line method primarily over estimated lives ranging up to 7 years. We amortize our other intangible assets using the sum-of-years-digits or straight-line method over an estimated life of 4 to 20 years. Other intangible assets not arising from business combinations are initially recorded at cost. Where there are no legal, regulatory, contractual or other factors that would reasonably limit the useful life of an intangible asset, we classify the intangible asset as indefinite-lived and such intangible assets are not amortized.

Internally used software, whether purchased or developed by us, is capitalized and amortized using the straight-line method over its estimated useful life. We have capitalized certain costs associated with software such as costs of employees devoted to software development and external direct costs for materials and services. Costs associated with software to be used for internal purposes are expensed until the point at which the project has reached the development stage. Subsequent additions, modifications or upgrades to internal-use software are capitalized only to the extent that they allow the software to perform a task it previously did not perform. Software maintenance, data conversion and training costs are expensed in the period in which they are incurred. We review the remaining economic lives of our capitalized software annually. Capitalized software is included in other intangible assets, net, in our consolidated balance sheets.

Our long-lived intangible assets, other than goodwill, with indefinite lives are assessed for impairment annually, or, under certain circumstances, more frequently, such as when events or changes in circumstances indicate there may be an impairment. These assets are carried at the estimated fair value at the time of acquisition and assets not acquired in acquisitions are recorded at historical cost. However, if their estimated fair value is less than the carrying amount, we recognize an impairment charge for the amount by which the carrying amount of these assets exceeds their estimated fair value.

We are required to assess goodwill for impairment at least annually, or more frequently, if an event occurs or circumstances change that indicates it is more likely than not that the fair values of our reporting units were less than their carrying values. We are required to write-down the value of goodwill in periods in which the recorded carrying value of equity exceeds the fair value of equity. Our reporting units are not discrete legal entities with discrete full financial statements. Therefore, the equity carrying value and future cash flows are assessed each time a goodwill impairment assessment is performed on a reporting unit. To do so, we assign our assets, liabilities and cash flows to reporting units using reasonable and consistent allocation methodologies, which entail various estimates, judgments and assumptions.

We are required to reassign goodwill to reporting units whenever reorganizations of our internal reporting structure changes the composition of our reporting units. Goodwill is reassigned to the reporting units using a relative fair value approach. When the fair value of a reporting unit is available, we allocate goodwill based on the relative fair value of the reporting units. When fair value is not available, we utilize an alternative allocation methodology that represents a reasonable proxy for the fair value of the operations being reorganized.

For more information, see Note 2—Goodwill, Customer Relationships and Other Intangible Assets.

Derivatives and Hedging

From time to time we have used derivative instruments to hedge exposure to interest rate risks arising from fluctuation in interest rates. We account for derivative instruments in accordance with ASC 815, *Derivatives and Hedging*, which establishes accounting and reporting standards for derivative instruments. We do not use derivative financial instruments for speculative purposes.

Derivatives are recognized in the consolidated balance sheets at their fair values. When we become a party to a derivative instrument and intend to apply hedge accounting, we formally document the hedge relationship and the risk management objective for undertaking the hedge which includes designating the instrument for financial reporting purposes as a fair value hedge, a cash flow hedge, or a net investment hedge.

We entered into eleven variable-to-fixed interest rate swap agreements during 2019, which we designated as cash-flow hedges. We evaluate the effectiveness of these hedges qualitatively on a quarterly basis. The change in the fair value of the interest rate swaps is reflected in Accumulated Other Comprehensive Loss ("AOCI") and is subsequently reclassified into earnings in the period the hedged transaction affects earnings, by virtue of qualifying as effective cash flow hedges. For more information see Note 14—Derivative Financial Instruments.

Pension and Post-Retirement Benefits

We recognize the funded status of our defined benefit and post-retirement plans as an asset or a liability on our consolidated balance sheet. Each year's actuarial gains or losses are a component of our other comprehensive loss, which is then included in our accumulated other comprehensive loss. Pension and post-retirement benefit expenses are recognized over the period in which the employee renders service and becomes eligible to receive benefits. We make significant assumptions (including the discount rate, expected rate of return on plan assets, mortality and health care trend rates) in computing the pension and post-retirement benefits expense and obligations. See Note 10—Employee Benefits for additional information.

Foreign Currency

Local currencies of foreign subsidiaries are the functional currencies for financial reporting purposes except for certain foreign subsidiaries, primarily in Latin America. For operations outside the United States that have functional currencies other than the U.S. dollar, assets and liabilities are translated to U.S. dollars at period-end exchange rates, and revenue, expenses and cash flows are translated using average monthly exchange rates. A significant portion of our non-United States subsidiaries use either the British pound, the Euro or the Brazilian Real as their functional currency, each of which experienced significant fluctuations against the U.S. dollar during the years ended December 31, 2020, 2019 and 2018. We recognize foreign currency translation gains and losses as a component of accumulated other comprehensive loss in stockholders' equity and in our consolidated statements of comprehensive loss in accordance with accounting guidance for foreign currency translation. We consider the majority of our investments in our foreign subsidiaries to be long-term in nature. Our foreign currency transaction gains (losses), including where transactions with our non-United States subsidiaries are not considered to be long-term in nature, are included within other income, net on our consolidated statements of operations.

Common Stock

At December 31, 2020, we had 49 million shares authorized for future issuance under our equity incentive plans.

Preferred Stock

Holders of outstanding Lumen Technologies preferred stock are entitled to receive cumulative dividends, receive preferential distributions equal to \$25 per share plus unpaid dividends upon Lumen's liquidation and vote as a single class with the holders of common stock.

Section 382 Rights Plan

We maintain a Section 382 Rights Plan to protect our U.S. federal net operating loss carryforwards from certain Internal Revenue Code Section 382 limitations. Under the plan, one preferred stock purchase right was distributed for each share of our outstanding common stock as of the close of business on February 25, 2019, and those rights currently trade in tandem with the common stock until they expire or detach under the plan. This plan was designed to deter trading that would result in a change of control (as defined in Code Section 382), and therefore protect our ability to use our historical federal net operating losses in the future.

Dividends

The declaration and payment of dividends is at the discretion of our Board of Directors.

Change in Accounting Policy

During the first quarter of 2020, we elected to change the presentation for taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, including federal and certain state Universal Service Fund (USF) regulatory fees, to present all such taxes on a net basis in our consolidated statements of operations. Prior to the first quarter of 2020, we assessed whether we were the primary obligor or principal taxpayer for the taxes assessed in each jurisdiction where we do business. The previous policy resulted in presenting such USF fees on a gross basis within operating revenue and cost of services and products, and all other significant taxes on a net basis. We applied this change in accounting policy retrospectively during the first quarter of 2020. As a result, we have decreased both operating revenue and cost of services and products by \$911 million, \$943 million and \$863 million for the years ended December 31, 2020, 2019 and 2018, respectively. The change has no impact on operating income (loss), net loss, or loss per share in our consolidated statements of operations. Refer to our Form 8-K filing dated April 30, 2020 for further information.

We changed our policy to present such taxes on the net basis and believe the new policy is preferable because of the historical and potential future regulatory rate changes outside of our control resulting in significant variability in tax and fee revenue that are not indicative of our operating performance. We believe the net presentation provides the most useful and transparent financial information and improves comparability and consistency of financial results.

Recently Adopted Accounting Pronouncements

During 2020, we adopted Accounting Standards Update ("ASU") 2016-13, *"Measurement of Credit Losses on Financial Instruments."* During 2019, we adopted ASU 2016-02, *"Leases (ASC 842)"*. During 2018, we adopted ASU 2018-14, *"Compensation-Retirement Benefits-Defined Benefit Plans-General: Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans"*, ASU 2014-09, *"Revenue from Contracts with Customers"* and ASU 2018-02, *"Income Statement-Reporting Comprehensive Income: Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income"*.

Each of these is described further below.

Measurement of Credit Losses on Financial Instruments

We adopted ASU 2016-13, *"Measurement of Credit Losses on Financial Instruments"* ("ASU 2016-13") on January 1, 2020, and recognized a cumulative adjustment to our accumulated deficit as of the date of adoption of \$9 million, net of tax effect of \$2 million. Please refer to Note 5—Credit Losses on Financial Instruments for more information.

Leases

We adopted ASU 2016-02, *"Leases (ASC 842)"*, as of January 1, 2019, using the non-comparative transition option pursuant to ASU 2018-11. Therefore, we have not restated comparative period financial information for the effects of ASC 842, and we have not made the new required lease disclosures for comparative periods beginning before January 1, 2019. Instead, we recognized ASC 842's cumulative effect transition adjustment (discussed below) as of January 1, 2019. In addition, we elected the package of practical expedients permitted under the transition guidance within the new standard, which among other things (i) allowed us to carry forward the historical lease classification; (ii) did not require us to reassess whether any expired or existing contracts are or contain leases under the new definition of a lease; and (iii) did not require us to reassess whether previously capitalized initial direct costs for any existing leases would qualify for capitalization under ASC 842. We also elected the practical expedient related to land easements, allowing us to carry forward our accounting treatment for land easements on existing agreements. We did not elect the hindsight practical expedient regarding the likelihood of exercising a lessee purchase option or assessing any impairment of right-of-use assets for existing leases.

On March 5, 2019, the Financial Accounting Standards Board ("FASB") issued ASU 2019-01, *"Leases (ASC 842): Codification Improvements"*, ("ASU 2019-01") effective for public companies for fiscal years beginning after December 15, 2019. The new ASU aligns the guidance in ASC 842 for determining fair value of the underlying asset by lessors that are not manufacturers or dealers, with that of existing guidance. As a result, the fair value of the underlying asset at lease commencement is its cost, reflecting any volume or trade discounts that may apply. However, if there has been a significant lapse of time between when the underlying asset is acquired and when the lease commences, the definition of *fair value* (in ASC 820, *"Fair Value Measurement"*) should be applied. More importantly, the ASU also exempts both lessees and lessors from having to provide certain interim disclosures in the fiscal year in which a company adopts the new leases standard. Early adoption permits public companies to adopt concurrent with the transition to ASC 842 on leases. We adopted ASU 2019-01 as of January 1, 2019.

Adoption of the new standards resulted in the recording of operating lease assets and operating lease liabilities of approximately \$2.1 billion and \$2.2 billion, respectively, as of January 1, 2019. The difference is driven principally by the netting of our existing real estate restructure reserve against the corresponding operating lease right of use asset. In addition, we recorded a \$96 million cumulative adjustment (net of tax of \$37 million) to accumulated deficit as of January 1, 2019, for the impact of the new accounting standards. Our financial position for reporting periods beginning on or after January 1, 2019 is presented under the new guidance, as discussed above, while prior period amounts are not adjusted and continue to be reported in accordance with previous guidance.

Retirement Benefits

In August 2018, the FASB issued ASU 2018-14, *"Compensation-Retirement Benefits-Defined Benefit Plans-General: Disclosure Framework-Changes to the Disclosure Requirements for Defined Benefit Plans"* ("ASU 2018-14"). ASU 2018-14 eliminates requirements for certain disclosures that are not considered cost beneficial, clarifies certain required disclosures and adds additional disclosures under defined benefit pension plans and other postretirement plans. We adopted this guidance during the fourth quarter 2018. The adoption of ASU 2018-14 did not have a material impact to our consolidated financial statements.

Revenue Recognition

In May 2014, the FASB issued ASU 2014-09, *"Revenue from Contracts with Customers"* ("ASU 2014-09") which replaces virtually all existing generally accepted accounting principles on revenue recognition with a principles-based approach for determining revenue recognition using a new five step model. The core principle of ASU 2014-09 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 also includes new accounting principles related to the deferral and amortization of contract acquisition and fulfillment costs.

We adopted the new revenue recognition standard under the modified retrospective transition method. During the year ended December 31, 2018, we recorded a cumulative catch-up adjustment that increased our retained earnings by \$338 million, net of \$119 million of income taxes.

See Note 3—Revenue Recognition for additional information.

Comprehensive Loss

In February 2018, the FASB issued ASU 2018-02, *"Income Statement-Reporting Comprehensive Income: Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income"* ("ASU 2018-02") which provides an option to reclassify stranded tax effects within accumulated other comprehensive loss to retained earnings in each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act (the "Act") (or portion thereof) is recorded. If an entity elects to reclassify the income tax effects of the Act, the amount of that reclassification shall include the effect of the change in the U.S. federal corporate income tax rate on the gross deferred tax amounts and related valuation allowances, if any, at the date of enactment of the Act related to items remaining in accumulated other comprehensive loss. The effect of the change in the U.S. federal corporate income tax rate on gross valuation allowances that were originally charged to income from continuing operations shall not be included. ASU 2018-02 is effective January 1, 2019, but early adoption is permitted and should be applied either in the period of adoption or retrospectively to each period (or periods) in which the effect of the change in the U.S. federal corporate income tax rate in the Act is recognized. We early adopted and applied ASU 2018-02 in the first quarter of 2018. The adoption of ASU 2018-02 resulted in a \$407

million increase to retained earnings and in accumulated other comprehensive loss. See Note 20—Accumulated Other Comprehensive Loss for additional information.

Recently Issued Accounting Pronouncements

In October 2020, the FASB issued ASU 2020-09, "*Debt (Topic 470) Amendments to SEC Paragraphs Pursuant to SEC Release No. 33-10762*" ("ASU 2020-09"). This ASU amends and supersedes various SEC paragraphs to reflect SEC Release No. 33-10762, which includes amendments to the financial disclosure requirements applicable to registered debt offerings that include credit enhancements, such as subsidiary guarantees. The cumulative effect of initially applying ASU 2020-09 on January 4, 2021 will not have material impact to our consolidated financial statements.

In March 2020, the FASB issued ASU 2020-04, "*Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*" ("ASU 2020-04"), designed to ease the burden of accounting for contract modifications related to the global market-wide reference rate transition period. Subject to certain criteria, ASU 2020-04 provides qualifying entities the option to apply expedients and exceptions to contract modifications and hedging accounting relationships made until December 31, 2022. In January 2021, the FASB issued ASU 2021-01, "*Reference Rate Reform (Topic 848): Scope*" ("ASU 2021-01"). This ASU clarifies that certain optional expedients and exceptions in Topic 848 for contract modifications and hedge accounting apply to derivative that are affected by the discounting transition. The ASU also amends the expedients and expectations in Topic 848 to capture the incremental consequences of the scope clarification and to tailor the existing guidance to derivatives instruments affected by the discounting transition. As of December 31, 2020, we are evaluating the impact on our consolidated financial statements.

In January 2020, the FASB issued ASU 2020-01, "*Investments—Equity Securities (Topic 321), Investments—Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815)—Clarifying the Interactions between Topic 321, Topic 323, and Topic 815*" ("ASU 2020-01"). This ASU among other things clarifies that a company should consider observable transactions that require a company to either apply or discontinue the equity method of accounting under Topic 323, Investments—Equity Method and Joint Ventures, for the purposes of applying the measurement alternative in accordance with Topic 321 immediately before applying or upon discontinuing the equity method. As of December 31, 2020, we determined there was no application or discontinuation of the equity method during the reporting periods. The cumulative effect of initially applying ASU 2020-01 on January 1, 2021 will not have a material impact to our consolidated financial statements.

In December 2019, the FASB issued ASU 2019-12, "*Simplifying the Accounting for Income Taxes (Topic 740)*" ("ASU 2019-12"). ASU 2019-12 removes certain exceptions for investments, intra-period allocations and interim calculations, and adds guidance to reduce complexity in accounting for income taxes. ASU 2019-12 will become effective for us in the first quarter of fiscal 2021 and early adoption is permitted. The cumulative effect of initially applying ASU 2019-12 on January 1, 2021 will not have a material impact to our consolidated financial statements.

(2) Goodwill, Customer Relationships and Other Intangible Assets

Goodwill, customer relationships and other intangible assets consisted of the following:

	As of December 31,	
	2020	2019
	(Dollars in millions)	
Goodwill	\$ 18,870	21,534
Indefinite-life intangible assets	\$ 278	269
Other intangible assets subject to amortization:		
Customer relationships, less accumulated amortization of \$11,060 and \$9,809	6,344	7,596
Capitalized software, less accumulated amortization of \$3,279 and \$2,957	1,520	1,599
Trade names, less accumulated amortization of \$120 and \$91	77	103
Total other intangible assets, net	\$ 8,219	9,567

Our goodwill was derived from numerous acquisitions where the purchase price exceeded the fair value of the net assets acquired.

We assess our goodwill and other indefinite-lived intangible assets for impairment annually, or, under certain circumstances, more frequently, such as when events or changes in circumstances indicate there may be impairment. We are required to write down the value of goodwill only when our assessment determines the carrying value of equity of any of our reporting units exceeds its fair value. Our annual impairment assessment date for goodwill is October 31, at which date we assess our reporting units. At October 31, 2020 and 2019, our international and global accounts segment was comprised of our North America global accounts ("NA GAM"), Europe, Middle East and Africa region ("EMEA"), Latin America region ("LATAM") and Asia Pacific region ("APAC") reporting units. At October 31, 2020 and 2019 our reporting units were consumer, small and medium business, enterprise, wholesale, NA GAM, EMEA, LATAM and APAC. Our annual impairment assessment date for indefinite-lived intangible assets other than goodwill is December 31.

Our reporting units are not discrete legal entities with discrete full financial statements. Our assets and liabilities are employed in and relate to the operations of multiple reporting units. For each reporting unit, we compare its estimated fair value of equity to its carrying value of equity that we assign to the reporting unit. If the estimated fair value of the reporting unit is greater than the carrying value, we conclude that no impairment exists. If the estimated fair value of the reporting unit is less than the carrying value, we record an impairment equal to the excess amount. Depending on the facts and circumstances, we typically estimate the fair value of our reporting units by considering either or both of (i) a discounted cash flow method, which is based on the present value of projected cash flows over a discrete projection period and a terminal value, which represents the value of expected normalized cash flows of the reporting units following the discrete projection period, and (ii) a market approach, which includes the use of market multiples of publicly-traded companies whose services are comparable to ours.

At October 31, 2020, we estimated the fair value of our eight above-mentioned reporting units by considering both a market approach and a discounted cash flow method. We discounted the projected cash flows for our consumer, enterprise, wholesale, small and medium business and NA GAM segments using a rate that represents our weighted average cost of capital, which we determined to be approximately 7.6% as of the assessment date (which comprised an after-tax cost of debt of 2.5% and a cost of equity of 10.7%). We discounted the projected cash flows of our EMEA, LATAM and APAC reporting units using a rate that represents their estimated weighted average cost of capital, which we determined to be approximately 8.0%, 14.3% and 10.1%, respectively, as of the measurement date (which was comprised of an after-tax cost of debt of 2.9%, 6.9% and 3.9% and a cost of equity of 11.2%, 18.8% and 14.0%, respectively). We utilized company comparisons and analyst reports within the telecommunications industry which have historically supported a range of fair values derived from annualized revenue and earnings before interest, taxes, depreciation and amortization ("EBITDA") multiples between 2.0x and 5.5x and 4.8x and 12.5x, respectively. We selected a revenue and EBITDA multiple for each of our reporting units resulting in an overall company revenue and EBITDA multiple of 2.3x and 5.7x, respectively. We also reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2020 and concluded that the indicated implied control premium of approximately 33.0% was reasonable based on recent market transactions. Due to the decline in our stock price at October 31, 2020 and our assessment performed with respect to the reporting units described above, we concluded that the estimated fair value of certain of our reporting units was less than our carrying value of equity for our consumer, wholesale, small and medium business and EMEA reporting units. As a result, these reporting units were impaired resulting in a non-cash, non-tax-deductible goodwill impairment charge of \$2.6 billion. See the table below for the impairment charges by segment. As of October 31, 2020, the estimated fair value of equity exceeded the carrying value of equity for our enterprise, NA GAM, LATAM and APAC reporting units by 2%, 46%, 74% and 23%, respectively. Based on our assessments performed, we concluded that the goodwill assigned to our enterprise, NA GAM, LATAM and APAC reporting units was not impaired at October 31, 2020.

At October 31, 2019, we estimated the fair value of our eight above-mentioned reporting units by considering both a market approach and a discounted cash flow method. We discounted the projected cash flows for our consumer, enterprise, wholesale, small and medium business and NA GAM reporting units using a rate that represents our weighted average cost of capital, which we determined to be approximately 6.3% as of the assessment date (which was comprised of an after-tax cost of debt of 4.4% and a cost of equity of 7.6%). We discounted the projected cash flows of our EMEA, LATAM and APAC reporting units using a rate that represents their estimated weighted average cost of capital, which we determined to be approximately 6.8%, 10.0% and 9.0%, respectively, as of the measurement date (which was comprised of an after-tax cost of debt of 4.8%, 6.1% and 7.1% and a cost of equity of 8.1%, 12.5% and 10.2%, respectively). We utilized company comparisons within the telecommunications industry and analyst reports which have historically supported a range of fair values derived from annualized revenue and EBITDA multiples between 2.3x and 5.4x and 5.6x and 12.2x, respectively. We selected a revenue and EBITDA multiple for each of our reporting units resulting in an overall company revenue and EBITDA multiple of 2.3x and 5.7x, respectively. We reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2019 and concluded that the indicated control premium of approximately 44.7% was reasonable based on recent market transactions. As of October 31, 2019, based on our assessment performed with respect to our eight reporting units, the estimated fair value of equity exceeded the carrying value of equity for our consumer, small and medium business, enterprise, wholesale, NA GAM, EMEA, LATAM, and APAC reporting units by 44%, 41%, 53%, 46%, 55%, 5%, 63% and 38%, respectively. Based on our assessments performed, we concluded that the goodwill for our eight reporting units was not impaired as of October 31, 2019.

Both our January 2019 internal reorganization and the decline in our stock price indicated the carrying values of our reporting units were more likely than not in excess of their fair values, requiring an impairment test in the first quarter of 2019. Because our low stock price was a key trigger for impairment testing during the first quarter of 2019, we estimated the fair value of our operations in such quarter using only the market approach. Applying this approach, we utilized company comparisons and analyst reports within the telecommunications industry which have historically supported a range of fair values derived from annualized revenue and EBITDA (earnings before interest, taxes, depreciation and amortization) multiples between 2.1x and 4.9x and 4.9x and 9.8x, respectively. We selected a revenue and EBITDA multiple for each of our reporting units within this range. We reconciled the estimated fair values of the reporting units to our market capitalization as of the date of each of our impairment tests during the first quarter of 2019 and concluded that the indicated control premium of approximately 4.5% and 4.1% was reasonable based on recent market transactions. In the quarter ended March 31, 2019, based on our assessments performed with respect to the reporting units as described above, we concluded that the estimated fair value of certain of our reporting units was less than our carrying value of equity as of the date of both of our impairment tests during the first quarter. As a result, we recorded non-cash, non-tax-deductible goodwill impairment charges aggregating to \$6.5 billion in the quarter ended March 31, 2019. See the table below for the impairment charges by segment.

At October 31, 2018, we estimated the fair value of our then five reporting units which were consumer, medium and small business, enterprise, international and global accounts, and wholesale and indirect by considering both a market approach and a discounted cash flow method. We reconciled the estimated fair values of the reporting units to our market capitalization as of October 31, 2018 and concluded that the indicated control premium of approximately 0.1% was reasonable based on recent market transactions. As of October 31, 2018, based on our assessment performed with respect to these reporting units as described above, we concluded that the estimated fair value of our consumer reporting unit was less than our carrying value of equity by approximately \$2.7 billion. As a result, we recorded a non-cash, non-tax-deductible goodwill impairment charge of \$2.7 billion for goodwill assigned to our consumer reporting unit during the fourth quarter of 2018. In addition, based on our assessments performed, we concluded that the goodwill for our four remaining reporting units was not impaired as of October 31, 2018.

We completed our qualitative assessment of our indefinite-lived intangible assets other than goodwill as of December 31, 2020 and 2019 and concluded it is more likely than not that our indefinite-lived intangible assets are not impaired; thus, no impairment charge for these assets was recorded in 2020 or 2019.

The following tables show the rollforward of goodwill assigned to our reportable segments from December 31, 2018 through December 31, 2020.

	Business	Consumer	Total
	(Dollars in millions)		
As of December 31, 2018 ⁽¹⁾	\$ 20,447	7,584	28,031

(1) Goodwill is net of accumulated impairment losses of \$3.8 billion.

	International and Global Accounts	Enterprise	Small and Medium Business	Wholesale	Consumer	Total
	(Dollars in millions)					
As of January 1, 2019	\$ 3,595	5,222	5,193	6,437	7,584	28,031
January 2019 reorganization	—	987	(1,038)	395	(344)	—
Effect of foreign currency exchange rate change and other	9	—	—	—	—	9
Impairment	(934)	(1,471)	(896)	(3,019)	(186)	(6,506)
As of December 31, 2019 ⁽¹⁾	2,670	4,738	3,259	3,813	7,054	21,534
Effect of foreign currency exchange rate change and other	(15)	—	(7)	—	—	(22)
Impairment	(100)	—	(444)	(699)	(1,399)	(2,642)
As of December 31, 2020 ⁽¹⁾	\$ 2,555	4,738	2,808	3,114	5,655	18,870

(1) Goodwill at December 31, 2020 and December 31, 2019 is net of accumulated impairment losses of \$12.9 billion and \$10.3 billion, respectively.

For additional information on our segments, see Note 16—Segment Information.

As of December 31, 2020, the weighted average remaining useful lives of our intangible assets were approximately 8 years in total, approximately 9 years for customer relationships, 3 years for capitalized software and 2 years for trade names.

Total amortization expense for intangible assets for the years ended December 31, 2020, 2019 and 2018 was \$1.7 billion, \$1.7 billion and \$1.8 billion, respectively. As of December 31, 2020, the gross carrying amount of goodwill, customer relationships, indefinite-life and other intangible assets was \$41.5 billion.

We estimate that total amortization expense for intangible assets for the years ending December 31, 2021 through 2025 will be as follows:

	(Dollars in millions)
2021	\$ 1,282
2022	1,065
2023	920
2024	853
2025	761

(3) Revenue Recognition

Reconciliation of Total Revenue to Revenue from Contracts with Customers

The following tables provide disaggregation of revenue from contracts with customers based on reporting segments and service offerings for the years ended December 31, 2020, 2019 and 2018. It also shows the amount of revenue that is not subject to ASC 606, but is instead governed by other accounting standards.

	Year Ended December 31, 2020		
	Total Revenue	Adjustments for Non-ASC 606 Revenue ⁽⁹⁾	Total Revenue from Contracts with Customers
	(Dollars in millions)		
International and Global Accounts			
IP and Data Services ⁽¹⁾	\$ 1,556	—	1,556
Transport and Infrastructure ⁽²⁾	1,265	(373)	892
Voice and Collaboration ⁽³⁾	368	—	368
IT and Managed Services ⁽⁴⁾	216	—	216
Total International and Global Accounts Segment Revenue	3,405	(373)	3,032
Enterprise			
IP and Data Services ⁽¹⁾	2,474	(2)	2,472
Transport and Infrastructure ⁽²⁾	1,608	(135)	1,473
Voice and Collaboration ⁽³⁾	1,424	(1)	1,423
IT and Managed Services ⁽⁴⁾	216	—	216
Total Enterprise Segment Revenue	5,722	(138)	5,584
Small and Medium Business			
IP and Data Services ⁽¹⁾	1,062	(3)	1,059
Transport and Infrastructure ⁽²⁾	352	(34)	318
Voice and Collaboration ⁽³⁾	1,098	(3)	1,095
IT and Managed Services ⁽⁴⁾	45	—	45
Total Small and Medium Business Segment Revenue	2,557	(40)	2,517
Wholesale			
IP and Data Services ⁽¹⁾	1,280	—	1,280
Transport and Infrastructure ⁽²⁾	1,764	(517)	1,247
Voice and Collaboration ⁽³⁾	731	—	731
IT and Managed Services ⁽⁴⁾	2	—	2
Total Wholesale Business Segment Revenue	3,777	(517)	3,260
Consumer			
Broadband ⁽⁵⁾	2,909	(217)	2,692
Voice ⁽⁶⁾	1,622	—	1,622
Regulatory ⁽⁷⁾	615	(615)	—
Other ⁽⁸⁾	105	(15)	90
Total Consumer Segment Revenue	5,251	(847)	4,404
Total revenue	\$ 20,712	(1,915)	18,797
Timing of revenue			
Goods and services transferred at a point in time			\$ 250
Services performed over time			18,547
Total revenue from contracts with customers			\$ 18,797

	Year Ended December 31, 2019		
	Total Revenue	Adjustments for Non-ASC 606 Revenue ⁽⁹⁾	Total Revenue from Contracts with Customers
	(Dollars in millions)		
International and Global Accounts			
IP and Data Services ⁽¹⁾	\$ 1,627	—	1,627
Transport and Infrastructure ⁽²⁾	1,268	(365)	903
Voice and Collaboration ⁽³⁾	354	—	354
IT and Managed Services ⁽⁴⁾	227	—	227
Total International and Global Accounts Segment Revenue	3,476	(365)	3,111
Enterprise			
IP and Data Services ⁽¹⁾	2,538	—	2,538
Transport and Infrastructure ⁽²⁾	1,479	(134)	1,345
Voice and Collaboration ⁽³⁾	1,423	—	1,423
IT and Managed Services ⁽⁴⁾	256	—	256
Total Enterprise Segment Revenue	5,696	(134)	5,562
Small and Medium Business			
IP and Data Services ⁽¹⁾	1,091	—	1,091
Transport and Infrastructure ⁽²⁾	365	(36)	329
Voice and Collaboration ⁽³⁾	1,226	—	1,226
IT and Managed Services ⁽⁴⁾	45	—	45
Total Small and Medium Business Segment Revenue	2,727	(36)	2,691
Wholesale			
IP and Data Services ⁽¹⁾	1,365	—	1,365
Transport and Infrastructure ⁽²⁾	1,907	(545)	1,362
Voice and Collaboration ⁽³⁾	763	—	763
IT and Managed Services ⁽⁴⁾	7	—	7
Total Wholesale Business Segment Revenue	4,042	(545)	3,497
Consumer			
Broadband ⁽⁵⁾	2,876	(215)	2,661
Voice ⁽⁶⁾	1,837	—	1,837
Regulatory ⁽⁷⁾	632	(632)	—
Other ⁽⁸⁾	172	(26)	146
Total Consumer Segment Revenue	5,517	(873)	4,644
Total revenue	\$ 21,458	(1,953)	19,505
Timing of revenue			
Goods and services transferred at a point in time			\$ 221
Services performed over time			19,284
Total revenue from contracts with customers			\$ 19,505

	Year Ended December 31, 2018		
	Total Revenue	Adjustments for Non-ASC 606 Revenue ⁽⁹⁾	Total Revenue from Contracts with Customers
	(Dollars in millions)		
International and Global Accounts			
IP and Data Services ⁽¹⁾	\$ 1,682	—	1,682
Transport and Infrastructure ⁽²⁾	1,230	(83)	1,147
Voice and Collaboration ⁽³⁾	365	—	365
IT and Managed Services ⁽⁴⁾	266	—	266
Total International and Global Accounts Segment Revenue	3,543	(83)	3,460
Enterprise			
IP and Data Services ⁽¹⁾	2,485	—	2,485
Transport and Infrastructure ⁽²⁾	1,484	(43)	1,441
Voice and Collaboration ⁽³⁾	1,495	—	1,495
IT and Managed Services ⁽⁴⁾	301	—	301
Total Enterprise Segment Revenue	5,765	(43)	5,722
Small and Medium Business			
IP and Data Services ⁽¹⁾	1,078	—	1,078
Transport and Infrastructure ⁽²⁾	424	(40)	384
Voice and Collaboration ⁽³⁾	1,366	—	1,366
IT and Managed Services ⁽⁴⁾	50	—	50
Total Small and Medium Business Segment Revenue	2,918	(40)	2,878
Wholesale			
IP and Data Services ⁽¹⁾	1,369	—	1,369
Transport and Infrastructure ⁽²⁾	2,118	(397)	1,721
Voice and Collaboration ⁽³⁾	865	—	865
IT and Managed Services ⁽⁴⁾	8	—	8
Total Wholesale Business Segment Revenue	4,360	(397)	3,963
Consumer			
Broadband ⁽⁵⁾	2,824	(213)	2,611
Voice ⁽⁶⁾	2,127	—	2,127
Regulatory ⁽⁷⁾	727	(727)	—
Other ⁽⁸⁾	316	(35)	281
Total Consumer Segment Revenue	5,994	(975)	5,019
Total revenue	\$ 22,580	(1,538)	21,042
Timing of revenue			
Goods and services transferred at a point in time			\$ 230
Services performed over time			20,812
Total revenue from contracts with customers			\$ 21,042

- (1) Includes primarily VPN data network, Ethernet, IP, content delivery and other ancillary services.
- (2) Includes wavelengths, private line, dark fiber services, colocation and data center services, including cloud, hosting and application management solutions, professional services and other ancillary services.
- (3) Includes local, long-distance voice, including wholesale voice, and other ancillary services, as well as VoIP services.
- (4) Includes information technology services and managed services, which may be purchased in conjunction with our other network services.
- (5) Includes high speed, fiber-based and lower speed DSL broadband services.
- (6) Includes local and long-distance services.
- (7) Includes (i) CAF and other support payments designed to reimburse us for various costs related to certain telecommunications services and (ii) other operating revenue from the leasing and subleasing of space.
- (8) Includes retail video services (including our linear TV services), professional services and other ancillary services.
- (9) Includes regulatory revenue, revenue from leasing arrangements and failed-sale-leaseback income in 2018, which are not within the scope of ASC 606.

Customer Receivables and Contract Balances

The following table provides balances of customer receivables, contract assets and contract liabilities as of December 31, 2020 and December 31, 2019:

	December 31, 2020	December 31, 2019
	(Dollars in millions)	
Customer receivables ⁽¹⁾	\$ 1,889	2,194
Contract assets	108	130
Contract liabilities	950	1,028

- (1) Reflects gross customer receivables of \$2.1 billion and \$2.3 billion, net of allowance for credit losses of \$174 million and \$94 million, at December 31, 2020 and December 31, 2019, respectively.

Contract liabilities are consideration we have received from our customers or billed in advance of providing goods or services promised in the future. We defer recognizing this consideration as revenue until we have satisfied the related performance obligation to the customer. Contract liabilities include recurring services billed one month in advance and installation and maintenance charges that are deferred and recognized over the actual or expected contract term, which typically ranges from one to five years depending on the service. Contract liabilities are included within deferred revenue in our consolidated balance sheet. During the years ended December 31, 2020 and December 31, 2019, we recognized \$672 million and \$630 million, respectively, of revenue that was included in contract liabilities as of January 1, 2020 and January 1, 2019, respectively.

Performance Obligations

As of December 31, 2020, our estimated revenue expected to be recognized in the future related to performance obligations associated with existing customer contracts that are partially or wholly unsatisfied is approximately \$5.5 billion. We expect to recognize approximately 91% of this revenue through 2023, with the balance recognized thereafter.

These amounts exclude (i) the value of unsatisfied performance obligations for contracts for which we recognize revenue at the amount to which we have the right to invoice for services performed (for example, uncommitted usage or non-recurring charges associated with professional or technical services to be completed), and (ii) contracts that are classified as leasing arrangements that are not subject to ASC 606.

Contract Costs

The following table provides changes in our contract acquisition costs and fulfillment costs:

	December 31, 2020	
	Acquisition Costs	Fulfillment Costs
	(Dollars in millions)	
Beginning of period balance	\$ 326	221
Costs incurred	181	141
Amortization	(218)	(146)
End of period balance	<u>\$ 289</u>	<u>216</u>

	December 31, 2019	
	Acquisition Costs	Fulfillment Costs
	(Dollars in millions)	
Beginning of period balance	\$ 322	187
Costs incurred	208	158
Amortization	(204)	(124)
End of period balance	<u>\$ 326</u>	<u>221</u>

Acquisition costs include commission fees paid to employees as a result of obtaining contracts. Fulfillment costs include third party and internal costs associated with the provision, installation and activation of telecommunications services to customers, including labor and materials consumed for these activities.

Deferred acquisition and fulfillment costs are amortized based on the transfer of services on a straight-line basis over the average customer life of approximately 30 months for consumer and business customers. Amortized fulfillment costs are included in cost of services and products and amortized acquisition costs are included in selling, general and administrative expenses in our consolidated statements of operations. The amount of these deferred costs that are anticipated to be amortized in the next 12 months are included in other current assets on our consolidated balance sheets. The amount of deferred costs expected to be amortized beyond the next twelve months is included in other non-current assets on our consolidated balance sheets. Deferred acquisition and fulfillment costs are assessed for impairment on an annual basis.

(4) Leases

Our financial position for reporting periods beginning on or after January 1, 2019 is presented under the new accounting guidance, while prior period amounts are not adjusted and continue to be reported in accordance with previous guidance, as discussed in Note 1— Background and Summary of Significant Accounting Policies.

We primarily lease to or from third parties various office facilities and colocation facilities, equipment and dark fiber. Leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term.

We determine if an arrangement is a lease at inception and whether that lease meets the classification criteria of a finance or operating lease. Lease-related assets, or right-of-use assets, are recognized at the lease commencement date at amounts equal to the respective lease liabilities. Lease-related liabilities are recognized at the present value of the remaining contractual fixed lease payments, discounted using our incremental borrowing rates. As part of the present value calculation for the lease liabilities, we use an incremental borrowing rate as the rates implicit in the leases are not readily determinable. The incremental borrowing rates used for lease accounting are based on our unsecured rates, adjusted to approximate the rates at which we could borrow on a collateralized basis over a term similar to the recognized lease term. We apply the incremental borrowing rates to lease components using a portfolio approach based upon the length of the lease term and the reporting entity in which the

lease resides. Operating lease expense is recognized on a straight-line basis over the lease term, while variable lease payments are expensed as incurred.

Some of our lease arrangements contain lease components, non-lease components (including common-area maintenance costs) and executory costs (including real estate taxes and insurance costs). We generally account for each component separately based on the estimated standalone price of each component. For colocation leases, we account for the lease and non-lease components as a single lease component.

Many of our lease agreements contain renewal options; however, we do not recognize right-of-use assets or lease liabilities for renewal periods unless it is determined that we are reasonably certain of renewing the lease at inception or when a triggering event occurs. Certain leases also include options to purchase the leased property. The depreciable life of assets and leasehold improvements are limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain to be exercised. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

Lease expense consisted of the following:

	Years Ended December 31,	
	2020	2019
	(Dollars in millions)	
Operating and short-term lease cost	\$ 729	677
Finance lease cost:		
Amortization of right-of-use assets	36	44
Interest on lease liability	12	12
Total finance lease cost	48	56
Total lease cost	\$ 777	733

Lumen Technologies leases various equipment, office facilities, retail outlets and other network sites. These leases, with few exceptions, provide for renewal options and escalations that are either fixed or based on the consumer price index. Any rent abatements, along with rent escalations, are included in the computation of rent expense calculated on a straight-line basis over the lease term. The lease term for most leases includes the initial non-cancelable term plus any term under renewal options that are reasonably assured. For the years ended December 31, 2020, 2019 and 2018, our gross rental expense was \$777 million, \$733 million and \$875 million, respectively. We also received sublease rental income for the years ended December 31, 2020, 2019 and 2018 of \$25 million, \$24 million and \$21 million, respectively.

Supplemental consolidated balance sheet information and other information related to leases:

Leases (Dollars in millions)	Classification on the Balance Sheet	As of December 31,	
		2020	2019
Assets			
Operating lease assets	Other, net	\$ 1,699	1,686
Finance lease assets	Property, plant and equipment, net of accumulated depreciation	329	252
Total leased assets		<u>\$ 2,028</u>	<u>1,938</u>
Liabilities			
Current			
Operating	Current operating lease liabilities	\$ 379	416
Finance	Current maturities of long-term debt	26	35
Noncurrent			
Operating	Other	1,405	1,342
Finance	Long-term debt	267	185
Total lease liabilities		<u>\$ 2,077</u>	<u>1,978</u>
Weighted-average remaining lease term (years)			
Operating leases		6.7	7.2
Finance leases		12.1	11.3
Weighted-average discount rate			
Operating leases		6.01 %	6.46 %
Finance leases		4.94 %	5.47 %

Supplemental consolidated cash flow statement information related to leases:

	Years Ended December 31,	
	2020	2019
(Dollars in millions)		
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows for operating leases	\$ 566	665
Operating cash flows for finance leases	14	14
Financing cash flows for finance leases	40	32
Supplemental lease cash flow disclosures		
Operating lease right-of-use assets obtained in exchange for new operating lease liabilities	\$ 375	358
Right-of-use assets obtained in exchange for new finance lease liabilities	124	14

As of December 31, 2020, maturities of lease liabilities were as follows:

	Operating Leases	Finance Leases
	(Dollars in millions)	
2021	\$ 469	40
2022	411	32
2023	331	29
2024	232	28
2025	177	29
Thereafter	592	240
Total lease payments	2,212	398
Less: interest	(428)	(105)
Total	1,784	293
Less: current portion	(379)	(26)
Long-term portion	\$ 1,405	267

As of December 31, 2020, we had no material operating or finance leases that had not yet commenced.

Operating Lease Income

Lumen Technologies leases various dark fiber, office facilities, colocation facilities, switching facilities, other network sites and service equipment to third parties under operating leases. Lease and sublease income are included in operating revenue in the consolidated statements of operations.

For the years ended December 31, 2020, 2019 and 2018, our gross rental income was \$1.3 billion, \$1.4 billion and \$882 million, respectively, which represents 6%, 7% and 4% respectively, of our operating revenue for the years ended December 31, 2020, 2019 and 2018.

(5) Credit Losses on Financial Instruments

In accordance with ASC 326, "*Financial Instruments - Credit Losses*", we aggregate financial assets with similar risk characteristics to align our expected credit losses with the credit quality or deterioration over the life of such assets. We monitor certain risk characteristics within our aggregated financial assets and revise their composition accordingly, to the extent internal and external risk factors change each reporting period. Financial assets that do not share risk characteristics with other financial assets are evaluated separately. Our financial assets measured at amortized cost primarily consist of accounts receivable.

In developing our accounts receivable portfolio, we pooled certain assets with similar credit risk characteristics based on the nature of our customers, their industry, policies used to grant credit terms and their historical and expected credit loss patterns. We grouped assets from our International and Global Accounts, Enterprise, Small and Medium Business and Wholesale segments into the Business portfolio in the below table.

Prior to the adoption of the new credit loss standard, the allowance for doubtful accounts receivable reflected our best estimate of probable losses inherent in our receivable portfolio determined based on historical experience, specific allowances for known troubled accounts, and other currently available evidence.

We implemented the new standard effective January 1, 2020, using a loss rate method to estimate our allowance for credit losses. Our determination of the current expected credit loss rate begins with our use of historical loss experience as a percentage of accounts receivable. We measure our historical loss period based on the average days to recognize accounts receivable as credit losses. When asset specific characteristics and current conditions change from those in the historical period, due to changes in our credit and collections strategy, certain classes of aged balances, or credit loss and recovery policies, we perform a qualitative and quantitative assessment to adjust our historical loss rate. We use regression analysis to develop an expected loss rate using historical experience and economic data over a forecast period. We measure our forecast period based on the average days

to collect payment on billed accounts receivable. To determine our current allowance for credit losses, we combine the historical and expected credit loss rates and apply them to our period end accounts receivable.

If there is a deterioration of a customer's financial condition or if future default rates in general differ from currently anticipated default rates (including changes caused by COVID-19), we may need to adjust the allowance for credit losses, which would affect earnings in the period that adjustments are made.

The assessment of the correlation between historical observed default rates, current conditions and forecasted economic conditions requires judgment. Alternative interpretations of these factors could have resulted in different conclusions regarding the allowance for credit losses. The amount of credit loss is sensitive to changes in circumstances and forecasted economic conditions. Our historical credit loss experience, current conditions and forecast of economic conditions may also not be representative of the customers' actual default experience in the future.

The following table presents the activity of our allowance for credit losses by accounts receivable portfolio:

	Business	Consumer	Total
	(Dollars in millions)		
Beginning balance at January 1, 2020 ⁽¹⁾	\$ 58	37	95
Provision for expected losses	115	74	189
Write-offs charged against the allowance	(74)	(59)	(133)
Recoveries collected	24	18	42
Foreign currency exchange rate changes adjustment	(2)	—	(2)
Ending balance at December 31, 2020	\$ 121	70	191

(1) The beginning balance includes the cumulative effect of the adoption of the new credit loss standard.

For the year ended December 31, 2020, we increased our allowance for credit losses for our business and consumer accounts receivable portfolios due to an increase in historical and expected loss experience in certain classes of aged balances, which we believe were predominantly attributable to the COVID-19 induced economic slowdown. We believe that decreased write-offs (net of recoveries) driven by COVID-19 regulations and programs have further contributed to an increase in our allowance for credit losses.

(6) Long-Term Debt and Credit Facilities

The following chart reflects the consolidated long-term debt of Lumen Technologies and its subsidiaries as of the dates indicated below, including unamortized discounts and premiums and unamortized debt issuance costs, but excluding intercompany debt:

			As of December 31,	
	Interest Rates ⁽¹⁾	Maturities ⁽¹⁾	2020	2019
			(Dollars in millions)	
Senior Secured Debt: ⁽²⁾				
Lumen Technologies				
Revolving Credit Facility ⁽³⁾	LIBOR + 2.00%	2025	\$ 150	250
Term Loan A ⁽³⁾⁽⁴⁾	LIBOR + 2.00%	2025	1,108	1,536
Term Loan A-1 ⁽³⁾⁽⁴⁾	LIBOR + 2.00%	2025	316	333
Term Loan B ⁽³⁾⁽⁵⁾	LIBOR + 2.25%	2027	4,950	5,880
Senior notes	4.000%	2027	1,250	—
Subsidiaries:				
Level 3 Financing, Inc.				
Tranche B 2027 Term Loan ⁽⁶⁾	LIBOR + 1.75%	2027	3,111	3,111
Senior notes	3.400% - 3.875%	2027 - 2029	1,500	1,500
Embarq Corporation subsidiaries				
First mortgage bonds	7.125% - 8.375%	2023 - 2025	138	138
Senior Notes and Other Debt:				
Lumen Technologies				
Senior notes	4.500% - 7.650%	2021 - 2042	8,645	8,696
Subsidiaries:				
Level 3 Financing, Inc.				
Senior notes	3.625% - 5.375%	2024 - 2029	5,515	5,515
Qwest Corporation				
Senior notes	6.500% - 7.750%	2021 - 2057	3,170	5,956
Term loan ⁽⁷⁾	LIBOR + 2.00%	2027	215	100
Qwest Capital Funding, Inc.				
Senior notes	6.875% - 7.750%	2021 - 2031	352	352
Embarq Corporation and subsidiary				
Senior note	7.995%	2036	1,437	1,450
Finance lease and other obligations	Various	Various	295	222
Unamortized discounts, net			(78)	(52)
Unamortized debt issuance costs			(237)	(293)
Total long-term debt			31,837	34,694
Less current maturities			(2,427)	(2,300)
Long-term debt, excluding current maturities			\$ 29,410	32,394

(1) As of December 31, 2020.

(2) See the remainder of this Note for a description of certain parent or subsidiary guarantees and liens securing this debt.

(3) Lumen's credit agreement was amended as noted below, extending the maturity date of its (a) Term Loan A, Term Loan A-1 and Revolving Credit Facilities from 2022 to 2025 and (b) Term Loan B from 2025 to 2027.

(4) Term Loans A and A-1 had interest rates of 2.147% and 4.459% as of December 31, 2020 and December 31, 2019, respectively.

- (5) Term Loan B had interest rates of 2.397% and 4.549% as of December 31, 2020 and December 31, 2019, respectively.
- (6) The Level 3 Tranche B 2027 Term Loan had interest rates of 1.897% and 3.549% as of December 31, 2020 and December 31, 2019, respectively.
- (7) Qwest Corporation's Term Loan had interest rates of 2.150% and 3.800% as of December 31, 2020 and December 31, 2019, respectively.

Long-Term Debt Maturities

Set forth below is the aggregate principal amount of our long-term debt as of December 31, 2020 (excluding unamortized discounts, net and unamortized debt issuance costs) maturing during the following years:

	(Dollars in millions)	
2021	\$	2,427
2022		1,544
2023		966
2024		2,043
2025		3,057
2026 and thereafter		22,115
Total long-term debt	\$	32,152

Debt of Lumen Technologies and its Subsidiaries

At December 31, 2020, most of our outstanding consolidated debt had been incurred by Lumen Technologies or one of the following four other primary borrowers or "borrowing groups," each of which has borrowed funds either on a standalone basis or as part of a separate restricted group with certain of its subsidiaries:

- Qwest Corporation;
- Qwest Capital Funding, Inc., including its parent guarantor, Qwest Communications International Inc.;
- Embarq Corporation; and
- Level 3 Financing, Inc., including its parent guarantor Level 3 Parent, LLC, and one or more subsidiary guarantors.

Each of these borrowers or borrowing groups has entered into one or more credit agreements with certain financial institutions or other institutional lenders, or issued senior notes. Certain of these debt instruments are described further below.

Amended and Restated Credit Agreement

On January 31, 2020, we amended and restated our credit agreement dated June 19, 2017 (as so amended and restated, the "Amended Credit Agreement"). At December 31, 2020, the Amended Credit Agreement consisted of the following facilities:

- a \$2.2 billion senior secured revolving credit facility ("the Revolving Credit Facility");
- a \$1.108 billion senior secured Term Loan A credit facility;
- a \$316 million senior secured Term Loan A-1 credit facility with CoBank, ACB; and
- a \$4.95 billion senior secured Term Loan "B" credit facility (the term loan facilities and the Revolving Credit Facility being referred to collectively as the "Amended Secured Credit Facilities").

Loans under the Term Loan A and A-1 facilities and the Revolving Credit Facility bear interest at a rate equal to, at our option, the Eurodollar rate or the alternative base rate (each as defined in the Amended Credit Agreement) plus an applicable margin between 1.50% to 2.25% per annum for Eurodollar loans and 0.50% to 1.25% per annum for alternative base rate loans, depending on our then current total leverage ratio. Loans under the Term Loan B facility bear interest at the Eurodollar rate plus 2.25% per annum or the alternative base rate plus 1.25% per annum. Loans under each of the term loan facilities require certain specified quarterly amortization payments and certain specified mandatory prepayments in connection with certain asset sales and debt issuances and out of excess cash flow, among other things, subject in each case to certain significant exceptions.

Borrowings under the Revolving Credit Facility and the Term Loan A and A-1 facilities mature on January 31, 2025. Borrowings under the Term Loan B facility mature on March 15, 2027.

All of Lumen's obligations under the Amended Secured Credit Facilities are guaranteed by certain of its subsidiaries. The guarantees by certain of those guarantors are secured by a first priority security interest in substantially all assets (including certain subsidiaries stock) directly owned by them, subject to certain exceptions and limitations.

A portion of the Revolving Credit Facility in an amount not to exceed \$250 million is available for swingline loans, and a portion in an amount not to exceed \$800 million is available for the issuance of letters of credit.

Lumen Technologies is permitted under the Amended Credit Agreement to request certain incremental borrowings subject to the satisfaction of various conditions and to certain other limitations. Any incremental borrowings would be subject to the same terms and conditions under the Amended Credit Agreement.

The above described January 2020 amendments and related refinancing transactions resulted in an aggregate net loss of \$67 million from modification and extinguishment of the debt.

Term Loans and Certain Other Debt of Subsidiaries

Qwest Corporation

On October 23, 2020, Qwest Corporation borrowed \$215 million under a variable-rate term loan with CoBank ACB and used the resulting net proceeds to pay off its previous \$100 million term loan with CoBank ACB. Additionally, on October 26, 2020, Qwest Corporation used the remaining net proceeds to partially facilitate the redemption of the remaining \$160 million aggregate principal amount of its outstanding 6.625% Notes due 2055. The outstanding unpaid principal amount of this new term loan plus any accrued and unpaid interest is due on October 23, 2027. Interest is paid at least quarterly based upon either the London Interbank Offered Rate ("LIBOR") or the base rate (as defined in the credit agreement) plus an applicable margin between 1.50% to 2.25% per annum for LIBOR loans and 0.50% to 1.25% per annum for base rate loans depending on Qwest Corporation's then current senior unsecured long-term debt rating. At December 31, 2020 and 2019, the outstanding principal balance owed under the new term loan and its predecessor was \$215 million and \$100 million, respectively.

Level 3 Financing, Inc.

At December 31, 2020, Level 3 Financing, Inc. owed \$3.111 billion, under a senior secured Tranche B 2027 Term Loan, which matures on March 1, 2027. The Tranche B 2027 Term Loan carries an interest rate, in the case of base rate borrowings, equal to (i) the greater of the Prime Rate, the Federal Funds Effective Rate plus 50 basis points, or LIBOR plus 100 basis points (with all such terms and calculations as defined or further specified in the credit agreement) plus (ii) 0.75% per annum. Any Eurodollar borrowings under the Tranche B 2027 Term Loan bear interest at LIBOR plus 1.75% per annum.

The Tranche B 2027 Term Loan requires certain specified mandatory prepayments in connection with certain asset sales and other transactions, subject to certain significant exceptions. The obligations of Level 3 Financing, Inc. under the Tranche B 2027 Term Loan are, subject to certain exceptions, secured by certain assets of Level 3 Parent, LLC and certain of its material domestic telecommunication subsidiaries. Also, Level 3 Parent, LLC and certain of its subsidiaries have guaranteed the obligations of Level 3 Financing, Inc. under the Tranche B 2027 Term Loan.

The net proceeds from the Tranche B 2027 Term Loan, together with the net proceeds from a concurrent offering of senior secured notes of Level 3 Financing, Inc., were used to pre-pay in full Level 3 Financing's predecessor Tranche B 2024 Term Loan.

Embarq Subsidiaries

At December 31, 2020 and 2019, one of our Embarq subsidiaries had outstanding first mortgage bonds. These first mortgage bonds are secured by substantially all of the property, plant and equipment of the issuing subsidiary.

Revolving Letters of Credit

We use various financial instruments in the normal course of business. These instruments include letters of credit, which are conditional commitments issued on our behalf in accordance with specified terms and conditions. Lumen Technologies maintains an uncommitted \$225 million revolving letter of credit facility separate from the letter of credit facility included in the Amended Credit Facility noted above. Letters of credit issued under this facility are backed by credit enhancements in the form of secured guarantees issued by certain of our subsidiaries. As of December 31, 2020 and 2019, our outstanding letters of credit under this credit facility totaled \$97 million and \$82 million, respectively.

As of December 31, 2020, Level 3 Parent, LLC had outstanding letters of credit or other similar obligations of approximately \$18 million, of which \$11 million was collateralized by cash that is reflected on the consolidated balance sheets as restricted cash. As of December 31, 2019, Level 3 Parent, LLC had outstanding letters of credit or other similar obligations of approximately \$23 million of which \$18 million was collateralized by cash that is reflected on the consolidated balance sheets as restricted cash.

Senior Notes

Lumen's consolidated indebtedness at December 31, 2020 included (i) senior secured notes issued by Lumen Technologies and Level 3 Financing, Inc. and (ii) senior unsecured notes issued by Lumen Technologies, Level 3 Financing, Inc., Qwest Corporation, Qwest Capital Funding, Inc. and Embarq Corporation. All of these notes carry fixed interest rates and all principal is due on the notes' respective maturity dates, which rates and maturity dates are summarized in the table above. The Lumen Technologies secured senior notes are guaranteed by the same domestic subsidiaries that guarantee the Amended Credit Agreement. The senior notes issued by Level 3 Financing, Inc. are guaranteed by its parent, Level 3 Parent, LLC and one or more of its affiliates. The senior notes issued by Qwest Capital Funding, Inc. are guaranteed by its parent, Qwest Communications International Inc. Except for a limited number of senior notes issued by Qwest Corporation, the issuer generally can redeem the notes, at its option, in whole or in part, (i) pursuant to a fixed schedule of pre-established redemption prices, (ii) pursuant to a "make whole" redemption price or (iii) under certain other specified limited conditions. Under certain circumstances in connection with a "change of control" of Lumen Technologies, it will be required to make an offer to repurchase each series of these senior notes (other than two of its older series of notes) at a price of 101% of the principal amount redeemed, plus accrued and unpaid interest. Also, under certain circumstances in connection with a "change of control" of Level 3 Parent, LLC or Level 3 Financing, Inc., Level 3 Financing will be required to make an offer to repurchase each series of its outstanding senior notes at a price of 101% of the principal amount redeemed, plus accrued and unpaid interest.

New Issuances

On November 27, 2020, Lumen Technologies issued \$1.0 billion of 4.500% Senior Notes due 2029. The proceeds from this offering were used to redeem outstanding senior notes of Qwest Corporation and reduce borrowings under the Revolving Credit Facility.

On August 12, 2020, Level 3 Financing, Inc., issued \$840 million aggregate principal amount of its 3.625% Senior Notes due 2029 (the "2029 Notes"). Level 3 Financing, Inc. used the net proceeds from this offering to redeem certain of its outstanding senior note indebtedness. The 2029 Notes are guaranteed by Level 3 Parent, LLC and Level 3 Communications, LLC.

On June 15, 2020, Level 3 Financing, Inc., issued \$1.2 billion aggregate principal amount of its 4.250% Senior Notes due 2028 (the "2028 Notes"). Level 3 Financing, Inc. used the net proceeds from this offering to redeem certain of its outstanding senior note indebtedness. The 2028 Notes are guaranteed by Level 3 Parent, LLC and Level 3 Communications, LLC.

On January 24, 2020, Lumen Technologies issued \$1.25 billion aggregate principal amount of its 4.000% Senior Secured Notes due 2027 (the "2027 Notes"). Lumen Technologies used the net proceeds from this offering to repay a portion of the outstanding indebtedness under its Term Loan B facility. The 2027 Notes are guaranteed by each of Lumen's domestic subsidiaries that guarantees Lumen's Amended Credit Agreement, subject to various exceptions and limitations. While the 2027 Notes are not secured by any of the assets of Lumen Technologies, certain of the note guarantees are secured by a first priority security interest in substantially all of the assets of such guarantors (including the stock of certain of their respective subsidiaries), which assets also secure obligations under the Amended Credit Agreement on a pari passu basis.

On December 16, 2019, Lumen Technologies issued \$1.25 billion of 5.125% Senior Notes due 2026. The proceeds from the offering were primarily used to fully redeem on January 15, 2020 the \$1.1 billion of senior notes of Qwest Corporation.

On November 29, 2019, Level 3 Financing, Inc. issued \$750 million of 3.400% Senior Secured Notes due 2027 and \$750 million of 3.875% Senior Secured Notes due 2029. The proceeds from the offering together with cash on hand were primarily used to redeem a portion of the \$4.611 billion Tranche B 2024 Term Loan that was repaid on November 29, 2019. On November 29, 2019, Level 3 Financing, Inc. entered into an amendment to its credit agreement to incur \$3.111 billion in aggregate borrowings under the agreement through the Tranche B 2027 Term Loan discussed above.

On September 25, 2019, Level 3 Financing, Inc. issued \$1.0 billion of 4.625% Senior Notes due 2027. The proceeds from the offering together with cash on hand were used to redeem \$600 million outstanding principal amount of Level 3 Parent, LLC's senior notes and \$400 million Level 3 Financing, Inc.'s senior notes.

Repayments

2020

During 2020, Lumen Technologies and its affiliates repurchased approximately \$6.2 billion of their respective debt securities, which primarily included \$1.3 billion of Lumen Technologies credit agreement debt, \$2.8 billion of Qwest Corporation senior notes, \$78 million of Lumen Technologies senior notes and \$2.0 billion of Level 3 Financing, Inc. senior notes, which resulted in a loss of \$109 million, including the \$67 million loss resulting from the modification of the Amended Credit Agreement discussed above.

Additionally, during 2020, Lumen Technologies (i) paid at maturity \$973 million aggregate principal amount of its outstanding senior notes and (ii) made \$125 million of scheduled amortization payments under its term loans.

2019

During 2019, Lumen Technologies and its affiliates repurchased approximately \$3.6 billion of their respective debt securities, which primarily included approximately \$2.3 billion of Level 3 Financing, Inc. senior notes and term loan, \$600 million of Level 3 Parent, LLC senior notes, \$345 million of Qwest Capital Funding senior notes and \$340 million of Lumen Technologies senior notes, which resulted in an aggregate net gain of \$72 million. Additionally during 2019, Lumen paid \$398 million of its maturing senior notes and \$164 million of amortization payments under its term loans.

Interest Expense

Interest expense includes interest on total long-term debt. The following table presents the amount of gross interest expense, net of capitalized interest:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Interest expense:			
Gross interest expense	\$ 1,743	2,093	2,230
Capitalized interest	(75)	(72)	(53)
Total interest expense	<u>\$ 1,668</u>	<u>2,021</u>	<u>2,177</u>

Covenants

Lumen Technologies

With respect to the Term Loan A and A-1 facilities and the Revolving Credit Facility, the Amended Credit Agreement requires us to maintain (i) a maximum total leverage ratio of not more than 4.75 to 1.00 and (ii) a minimum consolidated interest coverage ratio of at least 2.00 to 1.00, with such ratios being determined and calculated in the manner described in the Amended Credit Agreement.

The Amended Secured Credit Facilities contain various representations and warranties and extensive affirmative and negative covenants. Such covenants include, among other things and subject to certain significant exceptions, restrictions on our ability to declare or pay dividends, repurchase stock, repay certain other indebtedness, create liens, incur additional indebtedness, make investments, engage in transactions with its affiliates, dispose of assets and merge or consolidate with any other person.

The senior notes of Lumen Technologies were issued under four separate indentures. These indentures restrict our ability to (i) incur, issue or create liens upon the property of Lumen Technologies and (ii) consolidate with or merge into, or transfer or lease all or substantially all of our assets to any other party. The indentures do not contain any provisions that restrict the issuance of new securities in the event of a material adverse change to us. However, as indicated above under "Senior Notes", Lumen Technologies will be required to offer to purchase certain of its long-term debt securities issued under its indentures under certain circumstances in connection with a "change of control" of Lumen Technologies.

Level 3 Companies

The term loan, senior secured notes and senior unsecured notes of Level 3 Financing, Inc. contain various representations and extensive affirmative and negative covenants. Such covenants include, among other things and subject to certain significant exceptions, restrictions on their ability to declare or pay dividends, repay certain other indebtedness, create liens, incur additional indebtedness, make investments, engage in transactions with their affiliates, dispose of assets and merge or consolidate with any other person. Also, as indicated above under "Senior Notes", Level 3 Financing, Inc. will be required to offer to repurchase or repay certain of its long-term debt under certain circumstances in connection with a "change of control" of Level 3 Financing or Level 3 Parent, LLC.

Qwest Companies

Under its term loan, Qwest Corporation must maintain a debt to EBITDA (earnings before interest, taxes, depreciation and amortization) ratio of not more than 2.85 to 1.00, as determined and calculated in the manner described in the applicable term loan documentation. The term loan also contains a negative pledge covenant, which generally requires Qwest Corporation to secure equally and ratably any advances under the term loan if it pledges assets or permit liens on its property for the benefit of other debtholders.

The senior notes of Qwest Corporation were issued under indentures dated April 15, 1990 and October 15, 1999. These indentures contain restrictions on the incurrence of liens and the consummation of certain transactions substantially similar to the above-described covenants in Lumen's indentures (but contain no mandatory repurchase provisions). The senior notes of Qwest Capital Funding, Inc. were issued under an indenture dated June 29, 1998 containing terms substantially similar to those set forth in Qwest Corporation's indentures.

Embarq

Embarq's senior note was issued pursuant to an indenture dated as of May 17, 2006. While Embarq is generally prohibited from creating liens on its property unless its senior notes are secured equally and ratably, Embarq can create liens on its property without equally and ratably securing its senior notes so long as the sum of all indebtedness so secured does not exceed 15% of Embarq's consolidated net tangible assets. The indenture also contains restrictions on the consummation of certain transactions substantially similar to Lumen's above-described covenants (but without mandatory repurchase provision), as well as certain customary covenants to maintain properties and pay all taxes and lawful claims.

Impact of Covenants

The debt covenants applicable to Lumen Technologies and its subsidiaries could materially adversely affect their ability to operate or expand their respective businesses, to pursue strategic transactions, or to otherwise pursue their plans and strategies. The covenants of the Level 3 companies may significantly restrict the ability of Lumen Technologies to receive cash from the Level 3 companies, to distribute cash from the Level 3 companies to other of Lumen's affiliated entities, or to enter into other transactions among Lumen's wholly-owned entities.

Certain of the debt instruments of Lumen Technologies and its subsidiaries contain cross payment default or cross acceleration provisions. When present, these provisions could have a wider impact on liquidity than might otherwise arise from a default or acceleration of a single debt instrument.

The ability of Lumen Technologies and its subsidiaries to comply with the financial covenants in their respective debt instruments could be adversely impacted by a wide variety of events, including unforeseen contingencies, many of which are beyond their control.

Compliance

At December 31, 2020, Lumen Technologies believes it and its subsidiaries were in compliance with the provisions and financial covenants contained in their respective material debt agreements in all material respects.

Guarantees

Lumen Technologies does not guarantee the debt of any unaffiliated parties, but, as noted above, as of December 31, 2020 certain of its largest subsidiaries guaranteed (i) its debt and letters of credit outstanding under its Amended Credit Agreement, its senior secured notes and its \$225 million letter of credit facility and (ii) the outstanding term loans or senior notes issued by certain other subsidiaries. As further noted above, several of the subsidiaries guaranteeing these obligations have pledged substantially all of their assets to secure their respective guarantees.

Subsequent Events

On January 13, 2021, Level 3 Financing, Inc. issued \$900 million aggregate principal amount of 3.750% Sustainability-Linked Senior Notes due 2029 (the "Sustainability-Linked Notes"). The net proceeds were used, together with cash on hand, to redeem all \$900 million aggregate principal amount of Level 3 Financing, Inc.'s outstanding 5.375% Senior Notes due 2024 (the "5.375% Notes") on February 12, 2021. Following this redemption there were no bonds outstanding for the 5.375% Notes. The Sustainability-Linked Notes are (i) guaranteed by Level 3 Parent, LLC and (ii) expected to be guaranteed by Level 3 Communications, LLC, upon the receipt of all requisite material governmental authorizations.

On February 16, 2021, Qwest Corporation fully redeemed all \$235 million aggregate principal amount of its outstanding 7.000% Senior Notes due 2056.

(7) Accounts Receivable

The following table presents details of our accounts receivable balances:

	As of December 31,	
	2020	2019
	(Dollars in millions)	
Trade and purchased receivables	\$ 1,717	1,971
Earned and unbilled receivables	345	374
Other	91	20
Total accounts receivable	2,153	2,365
Less: allowance for credit losses	(191)	(106)
Accounts receivable, less allowance	\$ 1,962	2,259

We are exposed to concentrations of credit risk from our customers. We generally do not require collateral to secure our receivable balances. We have agreements with other communications service providers whereby we agree to bill and collect on their behalf for services rendered by those providers to our customers within our local service area. We purchase accounts receivable from other communications service providers primarily on a recourse basis and include these amounts in our accounts receivable balance. We have not experienced any significant loss associated with these purchased receivables.

The following table presents details of our allowance for credit losses accounts:

	Beginning Balance	Additions	Deductions	Ending Balance
	(Dollars in millions)			
2020 ⁽¹⁾	\$ 106	189	(104)	191
2019	142	145	(181)	106
2018	164	153	(175)	142

(1) On January 1, 2020, we adopted ASU 2016-13 "Measurement of Credit Losses on Financial Instruments" and recognized a cumulative adjustment to our accumulated deficit as of the date of adoption of \$9 million, net of \$2 million tax effect. This adjustment is included within "Deductions". Please refer to Note 5 - Credit Losses on Financial Instruments for more information.

(8) Property, Plant and Equipment

Net property, plant and equipment is composed of the following:

	Depreciable Lives	As of December 31,	
		2020	2019
		(Dollars in millions)	
Land	N/A	\$ 848	867
Fiber, conduit and other outside plant ⁽¹⁾	15-45 years	26,522	24,666
Central office and other network electronics ⁽²⁾	3-10 years	20,692	19,608
Support assets ⁽³⁾	3-30 years	8,261	7,984
Construction in progress ⁽⁴⁾	N/A	1,611	2,300
Gross property, plant and equipment		57,934	55,425
Accumulated depreciation		(31,596)	(29,346)
Net property, plant and equipment		\$ 26,338	26,079

- (1) Fiber, conduit and other outside plant consists of fiber and metallic cable, conduit, poles and other supporting structures.
- (2) Central office and other network electronics consists of circuit and packet switches, routers, transmission electronics and electronics providing service to customers.
- (3) Support assets consist of buildings, cable landing stations, data centers, computers and other administrative and support equipment.
- (4) Construction in progress includes inventory held for construction and property of the aforementioned categories that has not been placed in service as it is still under construction.

We recorded depreciation expense of \$3.0 billion, \$3.1 billion and \$3.3 billion for the years ended December 31, 2020, 2019 and 2018, respectively.

Asset Retirement Obligations

At December 31, 2020, our asset retirement obligations balance was primarily related to estimated future costs of removing equipment from leased properties and estimated future costs of properly disposing of asbestos and other hazardous materials upon remodeling or demolishing buildings. Asset retirement obligations are included in other long-term liabilities on our consolidated balance sheets.

Our fair value estimates were determined using the discounted cash flow method.

The following table provides asset retirement obligation activity:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Balance at beginning of year	\$ 197	190	115
Accretion expense	10	11	10
Liabilities assumed in acquisition of Level 3 ⁽¹⁾	—	—	58
Liabilities settled	(8)	(14)	(14)
Change in estimate	—	10	21
Balance at end of year	<u>\$ 199</u>	<u>197</u>	<u>190</u>

(1) The liabilities assumed during 2018 relate to purchase price adjustments during the year.

The 2019 and 2018 change in estimates are offset against gross property, plant and equipment.

(9) Severance

Periodically, we reduce our workforce and accrue liabilities for the related severance costs. These workforce reductions result primarily from the progression or completion of our post-acquisition integration plans, increased competitive pressures, cost reduction initiatives, process improvements through automation and reduced workload demands due to reduced demand for certain services.

We report severance liabilities within accrued expenses and other liabilities - salaries and benefits in our consolidated balance sheets and report severance expenses in selling, general and administrative expenses in our consolidated statements of operations. As described in Note 16—Segment Information, we do not allocate these severance expenses to our segments.

Under prior GAAP, we had previously recognized liabilities to reflect our estimates of the fair values of the existing lease obligations for real estate which we have ceased using, net of estimated sublease rentals. In accordance with transitional guidance under the new lease standard (ASC 842), the existing lease obligation of \$110 million as of January 1, 2019 was netted against the operating lease right of use assets at adoption. For additional information, see Note 4—Leases to our consolidated financial statements in Item 8 of Part II of this report.

Changes in our accrued liabilities for severance expenses were as follows:

	Severance
	(Dollars in millions)
Balance at December 31, 2018	\$ 87
Accrued to expense	89
Payments, net	(87)
Balance at December 31, 2019	89
Accrued to expense	151
Payments, net	(137)
Balance at December 31, 2020	\$ 103

(10) Employee Benefits

Pension, Post-Retirement and Other Post-Employment Benefits

We sponsor various defined benefit pension plans (qualified and non-qualified) which, in the aggregate, cover a substantial portion of our employees including legacy CenturyLink, legacy Level 3, legacy Qwest Communications International Inc. ("Qwest") and legacy Embarq employees. Pension benefits for participants of the Lumen Combined Pension Plan ("Combined Pension Plan") who are represented by a collective bargaining agreement are based on negotiated schedules. All other participants' pension benefits are based on each individual participant's years of service and compensation. We also maintain non-qualified pension plans for certain current and former highly compensated employees. We maintain post-retirement benefit plans that provide health care and life insurance benefits for certain eligible retirees. We also provide other post-employment benefits for certain eligible former employees. We use a December 31 measurement date for all our plans.

Pension Benefits

United States funding laws require a company with a pension shortfall to fund the annual cost of benefits earned in addition to a seven-year amortization of the shortfall. Our funding policy for our Combined Pension Plan is to make contributions with the objective of accumulating ample assets to pay all qualified pension benefits when due under the terms of the plan. The accounting unfunded status of the Combined Pension Plan was \$1.7 billion as of December 31, 2020 and 2019.

We made no voluntary cash contributions to the Combined Pension Plan in 2020 and 2019 and paid \$5 million of benefits directly to participants of our non-qualified pension plans in both 2020 and 2019. Based on current laws and circumstances, we do not believe we are required to make any contributions to the Combined Pension Plan in 2021, but the Company could make voluntary contributions to the trust for the Combined Pension Plan in 2021. We estimate that in 2021 we will pay \$5 million of benefits directly to participants of our non-qualified pension plans.

We recognize in our balance sheet the funded status of the legacy Level 3 defined benefit post-retirement plans. The net unfunded status of these plans was \$33 million and \$18 million, as of December 31, 2020 and 2019, respectively. Additionally, as previously mentioned, we sponsor unfunded non-qualified pension plans for certain current and former highly-compensated employees. The net unfunded status of our non-qualified pension plans was \$51 million for both the years ended December 31, 2020 and 2019. Due to the insignificant impact of these pension plans on our consolidated financial statements, we have predominantly excluded them from the remaining employee benefit disclosures in this Note, unless specifically stated.

Post-Retirement Benefits

Our post-retirement benefit plans provide post-retirement benefits to qualified retirees and allow (i) eligible employees retiring before certain dates to receive benefits at no or reduced cost and (ii) eligible employees retiring after certain dates to receive benefits on a shared cost basis. The post-retirement benefits not paid by the trusts are funded by us and we expect to continue funding these post-retirement obligations as benefits are paid. The accounting unfunded status of our qualified post-retirement benefit plan was \$3.0 billion as of December 31, 2020 and 2019.

Assets in the post-retirement trusts were substantially depleted as of December 31, 2016; as of December 31, 2019 the Company ceased to pay certain post-retirement benefits through the trusts. No contributions were made to the post-retirement trusts in 2020 nor 2019. Starting in 2020, benefits were paid directly by us with available cash. In 2020, we paid \$211 million of post-retirement benefits, net of participant contributions and direct subsidies. In 2021, we currently expect to pay directly \$233 million of post-retirement benefits, net of participant contributions and direct subsidies.

We expect our expected health care cost trend to range from 5.0% to 6.25% in 2021 and grading to 4.50% by 2025. Our post-retirement benefit cost, for certain eligible legacy Qwest retirees and certain eligible legacy CenturyLink retirees, is capped at a set dollar amount. Therefore, those health care benefit obligations are not subject to increasing health care trends after the effective date of the caps.

Expected Cash Flows

The Combined Pension Plan payments, post-retirement health care benefit payments and premiums, and life insurance premium payments are either distributed from plan assets or paid by us. The estimated benefit payments provided below are based on actuarial assumptions using the demographics of the employee and retiree populations and have been reduced by estimated participant contributions.

	Combined Pension Plan	Post-Retirement Benefit Plans	Medicare Part D Subsidy Receipts
	(Dollars in millions)		
Estimated future benefit payments:			
2021	\$ 961	238	(5)
2022	868	232	(5)
2023	844	225	(5)
2024	819	217	(4)
2025	794	210	(4)
2026 - 2030	3,578	932	(16)

Net Periodic Benefit Expense

We utilize a full yield curve approach in connection with estimating the service and interest components of net periodic benefit expense by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flow.

The actuarial assumptions used to compute the net periodic benefit expense for our Combined Pension Plan and post-retirement benefit plans are based upon information available as of the beginning of the year, as presented in the following table.

	Combined Pension Plan			Post-Retirement Benefit Plans		
	2020	2019	2018	2020	2019	2018
Actuarial assumptions at beginning of year:						
Discount rate	2.79% - 3.55%	3.94% - 4.44%	3.14% - 3.69%	1.69% - 3.35%	3.84% - 4.38%	4.26 %
Rate of compensation increase	3.25 %	3.25 %	3.25 %	N/A	N/A	N/A
Expected long-term rate of return on plan assets ⁽¹⁾	6.00 %	6.50 %	6.50 %	4.00 %	4.00 %	4.00 %
Initial health care cost trend rate	N/A	N/A	N/A	6.50% / 5.00%	6.50% / 5.00%	7.00% / 5.00%
Ultimate health care cost trend rate	N/A	N/A	N/A	4.50 %	4.50 %	4.50 %
Year ultimate trend rate is reached	N/A	N/A	N/A	2025	2025	2025

N/A - Not applicable

(1) Rates are presented net of projected fees and administrative costs.

Net periodic benefit (income) expense for our Combined Pension Plan includes the following components:

Combined Pension Plan Years Ended December 31,			
	2020	2019	2018
	(Dollars in millions)		
Service cost	\$ 59	56	66
Interest cost	324	436	392
Expected return on plan assets	(593)	(618)	(685)
Special termination benefits charge	13	6	15
Recognition of prior service credit	(9)	(8)	(8)
Recognition of actuarial loss	202	223	178
Net periodic pension benefit (income) expense	<u>\$ (4)</u>	<u>95</u>	<u>(42)</u>

Net periodic benefit expense for our post-retirement benefit plans includes the following components:

Post-Retirement Plans Years Ended December 31,			
	2020	2019	2018
	(Dollars in millions)		
Service cost	\$ 14	15	18
Interest cost	69	110	97
Expected return on plan assets	(1)	(1)	(1)
Recognition of prior service cost	16	16	20
Curtailment loss	8	—	—
Net periodic post-retirement benefit expense	<u>\$ 106</u>	<u>140</u>	<u>134</u>

We report service costs for our Combined Pension Plan and post-retirement benefit plans in cost of services and products and selling, general and administrative expenses in our consolidated statements of operations for the years ended December 31, 2020, 2019 and 2018. Additionally, a portion of the service cost is also allocated to certain assets under construction, which are capitalized and reflected as part of property, plant and equipment in our consolidated balance sheets. The remaining components of net periodic benefit expense are reported in other income, net in our consolidated statements of operations. As a result of ongoing efforts to reduce our workforce, we recognized a one-time charge in 2020 of \$21 million, in 2019 of \$6 million and in 2018 of \$15 million for special termination benefit enhancements paid to certain eligible employees upon voluntary retirement.

Benefit Obligations

The actuarial assumptions used to compute the funded status for the plans are based upon information available as of December 31, 2020 and 2019 and are as follows:

	Combined Pension Plan		Post-Retirement Benefit Plans	
	December 31,		December 31,	
	2020	2019	2020	2019
Actuarial assumptions at end of year:				
Discount rate	2.43 %	3.25 %	2.40 %	3.22 %
Rate of compensation increase	3.25 %	3.25 %	N/A	N/A
Initial health care cost trend rate	N/A	N/A	6.25% / 5.00%	6.50% / 5.00%
Ultimate health care cost trend rate	N/A	N/A	4.50 %	4.50 %
Year ultimate trend rate is reached	N/A	N/A	2025	2025

N/A - Not applicable

In 2020, 2019 and 2018, we adopted the revised mortality tables and projection scales released by the Society of Actuaries, which decreased the projected benefit obligation of our benefit plans by \$3 million, \$4 million and \$38 million, respectively. The change in the projected benefit obligation of our benefit plans was recognized as part of the net actuarial loss and is included in accumulated other comprehensive loss, a portion of which is subject to amortization over the remaining estimated life of plan participants, which was approximately 9 years as of December 31, 2020.

The following tables summarize the change in the benefit obligations for the Combined Pension Plan and post-retirement benefit plans:

Combined Pension Plan Years Ended December 31,			
	2020	2019	2018
	(Dollars in millions)		
Change in benefit obligation			
Benefit obligation at beginning of year	\$ 12,217	11,594	13,064
Service cost	59	56	66
Interest cost	324	436	392
Plan amendments	(3)	(9)	—
Special termination benefits charge	13	6	15
Actuarial loss (gain)	749	1,249	(765)
Benefits paid from plan assets	(1,157)	(1,115)	(1,178)
Benefit obligation at end of year	\$ 12,202	12,217	11,594

Post-Retirement Benefit Plans Years Ended December 31,			
	2020	2019	2018
	(Dollars in millions)		
Change in benefit obligation			
Benefit obligation at beginning of year	\$ 3,037	2,977	3,375
Service cost	14	15	18
Interest cost	69	110	97
Participant contributions	46	52	54
Direct subsidy receipts	6	7	8
Plan Amendment	—	—	(36)
Actuarial loss (gain)	134	180	(224)
Curtailment loss	4	—	—
Benefits paid by company	(255)	(300)	(311)
Benefits paid from plan assets	(7)	(4)	(4)
Benefit obligation at end of year	\$ 3,048	3,037	2,977

Plan Assets

We maintain plan assets for our Combined Pension Plan and certain post-retirement benefit plans. As previously noted, assets in the post-retirement benefit plan trusts were substantially depleted as of December 31, 2016. Fair value of post-retirement benefit plan assets of December 31, 2020, 2019 and 2018 was \$5 million, \$13 million and \$18 million, respectively. Due to the insignificance of these assets on our consolidated financial statements, we have predominantly excluded them from the disclosures of plan assets in this Note, unless otherwise indicated.

The following tables summarize the change in the fair value of plan assets for the Combined Pension Plan:

	Combined Pension Plan Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Change in plan assets			
Fair value of plan assets at beginning of year	\$ 10,493	10,033	11,060
Return on plan assets	1,210	1,575	(349)
Employer contributions	—	—	500
Benefits paid from plan assets	(1,157)	(1,115)	(1,178)
Fair value of plan assets at end of year	<u>\$ 10,546</u>	<u>10,493</u>	<u>10,033</u>

The expected rate of return on plan assets is the long-term rate of return we expect to earn on the plan's assets, net of administrative expenses paid from plan assets. It is determined annually based on the strategic asset allocation and the long-term risk and return forecast for each asset class.

Our investment objective for the Combined Pension Plan assets is to achieve an attractive risk-adjusted return over time that will provide for the payment of benefits and minimize the risk of large losses. We employ a liability-aware investment strategy designed to reduce the volatility of pension assets relative to pension liabilities. This strategy is evaluated frequently and is expected to evolve over time with changes in the funded status and other factors. Approximately 55% of plan assets is targeted to long-duration investment grade bonds and interest rate sensitive derivatives and 45% is targeted to diversified equity, fixed income and private market investments that are expected to outperform the liability with moderate funded status risk. At the beginning of 2021, our expected annual long-term rate of return on pension assets before consideration of administrative expenses is assumed to be 6.0%. Administrative expenses, including projected PBGC (Pension Benefit Guaranty Corporation) premiums reduce the annual long-term expected return net of administrative expenses to 5.5%.

The short-term and long-term interest crediting rates during 2020 for cash balance components of the Combined Pension Plan were 2.25% and 4.0%, respectively.

Permitted investments: Plan assets are managed consistent with the restrictions set forth by the Employee Retirement Income Security Act of 1974, as amended.

Fair Value Measurements: Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between independent and knowledgeable parties who are willing and able to transact for an asset or liability at the measurement date. We use valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs when determining fair value and then we rank the estimated values based on the reliability of the inputs used following the fair value hierarchy set forth by the FASB. For additional information on the fair value hierarchy, see Note 13—Fair Value of Financial Instruments.

At December 31, 2020, we used the following valuation techniques to measure fair value for assets. There were no changes to these methodologies during 2020:

- Level 1—Assets were valued using the closing price reported in the active market in which the individual security was traded.
- Level 2—Assets were valued using quoted prices in markets that are not active, broker dealer quotations, and other methods by which all significant inputs were observable at the measurement date.
- Level 3—Assets were valued using unobservable inputs in which little or no market data exists as reported by the respective institutions at the measurement date.

The plan's assets are invested in various asset categories utilizing multiple strategies and investment managers. Interests in commingled funds are fair valued using a practical expedient to the net asset value ("NAV") per unit (or its equivalent) of each fund. The NAV reported by the fund manager is based on the market value of the underlying investments owned by each fund, minus its liabilities, divided by the number of shares outstanding. Commingled funds can be redeemed at NAV, with a frequency that includes, daily, monthly, quarterly, semi-annually and annually. These commingled funds include redemption notice periods between same day and 270 days. Investments in private funds, primarily limited partnerships, represent long-term commitments with a fixed maturity date and are also valued at NAV. The plan has unfunded commitments related to certain private fund investments, which in aggregate are not material to the plan. Valuation inputs for these private fund interests are generally based on assumptions and other information not observable in the market. Underlying investments held in funds are aggregated and are classified based on the fund mandate. Investments held in separate accounts are individually classified.

The table below present the fair value of plan assets by category and the input levels used to determine those fair values at December 31, 2020. It is important to note that the asset allocations do not include market exposures that are gained with derivatives. Investments include dividend and interest receivables, pending trades and accrued expenses.

	Fair Value of Combined Pension Plan Assets at December 31, 2020			
	Level 1	Level 2	Level 3	Total
	(Dollars in millions)			
Assets				
Investment grade bonds (a)	\$ 726	4,066	—	4,792
High yield bonds (b)	—	262	6	268
Emerging market bonds (c)	218	172	—	390
U.S. stocks (d)	653	—	2	655
Non-U.S. stocks (e)	593	1	—	594
Private debt (h)	—	—	—	—
Multi-asset strategies (l)	199	—	—	199
Repurchase agreements (n)	—	—	—	—
Cash equivalents and short-term investments (o)	—	281	—	281
Total investments, excluding investments valued at NAV	<u>\$ 2,389</u>	<u>4,782</u>	<u>8</u>	<u>7,179</u>
Liabilities				
Derivatives (m)	\$ —	(1)	—	(1)
Investments valued at NAV				3,368
Total pension plan assets				<u>\$ 10,546</u>

The table below present the fair value of plan assets by category and the input levels used to determine those fair values at December 31, 2019. It is important to note that the asset allocations do not include market exposures that are gained with derivatives. Investments include dividend and interest receivable, pending trades and accrued expenses.

	Fair Value of Combined Pension Plan Assets at December 31, 2019			
	Level 1	Level 2	Level 3	Total
	(Dollars in millions)			
Assets				
Investment grade bonds (a)	\$ 828	3,197	—	4,025
High yield bonds (b)	—	232	5	237
Emerging market bonds (c)	203	84	—	287
U.S. stocks (d)	756	3	1	760
Non-U.S. stocks (e)	592	—	—	592
Private debt (h)	—	—	16	16
Multi-asset strategies (l)	257	—	—	257
Repurchase agreements (n)	—	39	—	39
Cash equivalents and short-term investments (o)	—	433	—	433
Total investments, excluding investments valued at NAV	\$ 2,636	3,988	22	6,646
Liabilities				
Derivatives (m)	\$ 1	(18)	—	(17)
Investments valued at NAV				3,864
Total pension plan assets				\$ 10,493

The table below presents the fair value of plan assets valued at NAV by category for our Combined Pension Plan at December 31, 2020 and 2019.

Fair Value of Plan Assets Valued at NAV		
Combined Pension Plan at December 31,		
	2020	2019
	(Dollars in millions)	
Investment grade bonds (a)	\$ 352	211
High yield bonds (b)	25	39
U.S. stocks (d)	192	169
Non-U.S. stocks (e)	308	467
Emerging market stocks (f)	81	92
Private equity (g)	283	322
Private debt (h)	505	483
Market neutral hedge funds (i)	222	433
Directional hedge funds (j)	254	443
Real estate (k)	543	635
Multi-asset strategies (l)	375	449
Cash equivalents and short-term investments (o)	228	121
Total investments valued at NAV	<u>\$ 3,368</u>	<u>3,864</u>

Below is an overview of the asset categories, the underlying strategies and valuation inputs used to value the assets in the preceding tables:

(a) *Investment grade bonds* represent investments in fixed income securities as well as commingled bond funds comprised of U.S. Treasury securities, agencies, corporate bonds, mortgage-backed securities, asset-backed securities and commercial mortgage-backed securities. Treasury securities are valued at the bid price reported in the active market in which the security is traded and are classified as Level 1. The valuation inputs of other investment grade bonds primarily utilize observable market information and are based on a spread to U.S. Treasury securities and consider yields available on comparable securities of issuers with similar credit ratings. The primary observable inputs include references to the new issue market for similar securities, the secondary trading markets and dealer quotes. Option adjusted spread models are utilized to evaluate securities such as asset backed securities that have early redemption features. These securities are classified as Level 2. NAV funds' underlying investments in this category are valued using the same inputs.

(b) *High yield bonds* represent investments in below investment grade fixed income securities as well as commingled high yield bond funds. The valuation inputs for the securities primarily utilize observable market information and are based on a spread to U.S. Treasury securities and consider yields available on comparable securities of issuers with similar credit ratings. These securities are primarily classified as Level 2. Securities whose valuation inputs are not based on observable market information are classified as Level 3. NAV funds' underlying investments in this category are valued using the same inputs.

(c) *Emerging market bonds* represent investments in securities issued by governments and other entities located in emerging countries as well as registered mutual funds and commingled emerging market bond funds. The valuation inputs for the securities utilize observable market information and are primarily based on dealer quotes or a spread relative to the local government bonds. The registered mutual fund is classified as Level 1 while individual securities are primarily classified as Level 2.

(d) *U.S. stocks* represent investments in stocks of U.S. based companies as well as commingled U.S. stock funds. The valuation inputs for U.S. stocks are based on the last published price reported on the major stock market on which the securities are traded and are primarily classified as Level 1. Securities that are not actively traded but can be directly or indirectly observable are classified as Level 2. Securities whose valuation inputs are not based on observable market information are classified as Level 3. NAV funds' underlying investments in this category are valued using the same inputs.

(e) *Non-U.S. stocks* represent investments in stocks of companies based in developed countries outside the U.S. as well as commingled funds. The valuation inputs for these non-U.S. stocks are based on the last published price reported on the major stock market on which the securities are traded and are primarily classified as Level 1. NAV funds' underlying investments in this category are valued using the same inputs.

(f) *Emerging market stocks* represent investments in commingled funds comprised of stocks of companies located in emerging markets. NAV funds' underlying investments in this category are valued using the same inputs.

(g) *Private equity* represents non-public investments in domestic and foreign buy out and venture capital funds. Private equity funds are primarily structured as limited partnerships and are valued according to the valuation policy of each partnership, subject to prevailing accounting and other regulatory guidelines. The partnerships are valued at NAV using valuation methodologies that consider a range of factors, including but not limited to the price at which investments were acquired, the nature of the investments, market conditions, trading values on comparable public securities, current and projected operating performance, and financing transactions subsequent to the acquisition of the investments. These valuation methodologies involve a significant degree of judgment.

(h) *Private debt* represents non-public investments in distressed or mezzanine debt funds and pension group insurance contracts. Pension group insurance contracts are valued based on actuarial assumptions and are classified as Level 3. Mezzanine debt instruments are debt instruments that are subordinated to other debt issues and may include embedded equity instruments such as warrants. Private debt funds are primarily structured as limited partnerships and are valued at NAV according to the valuation policy of each partnership, subject to prevailing accounting and other regulatory guidelines. The valuation of underlying fund investments is based on factors including the issuer's current and projected credit worthiness, the securities' terms, reference to the securities of comparable companies, and other market factors. These valuation methodologies involve a significant degree of judgment.

(i) *Market neutral hedge funds* hold investments in a diversified mix of instruments that are intended in combination to exhibit low correlations to market fluctuations. These investments are typically combined with futures to achieve uncorrelated excess returns over various markets. Hedge funds are valued at NAV based on the market value of the underlying investments which include publicly traded equity and fixed income securities and privately negotiated debt securities.

(j) *Directional hedge funds*—This asset category represents investments that may exhibit somewhat higher correlations to market fluctuations than the market neutral hedge funds. Investments in hedge funds include both direct investments and investments in diversified funds of funds. Hedge funds are valued at NAV based on the market value of the underlying investments which include publicly traded equity and fixed income securities and privately negotiated debt securities.

(k) *Real estate* represents investments in commingled funds and limited partnerships that invest in a diversified portfolio of real estate properties. These investments are valued at NAV according to the valuation policy of each fund or partnership, subject to prevailing accounting and other regulatory guidelines. The valuation inputs of the underlying properties are generally based on third-party appraisals that use comparable sales or a projection of future cash flows to determine fair value. These valuation methodologies involve a significant degree of judgment.

(l) *Multi-asset strategies* represent broadly diversified strategies that have the flexibility to tactically adjust exposures to different asset classes through time. This asset category includes investments in registered mutual funds which are classified as Level 1 and may include commingled funds which are valued at NAV based on the market value of the underlying investments.

(m) *Derivatives* include exchange traded futures contracts which are classified as Level 1, as well as privately negotiated over the counter contracts that are classified as Level 2. The market values represent gains or losses that occur due to differences between stated contract terms and fluctuations in underlying market instruments.

(n) *Repurchase Agreements* includes contracts where the security owner sells a security with the agreement to buy it back at a future date and price. Agreements are valued based on expected settlement terms and are classified as Level 2.

(o) *Cash equivalents and short-term investments* represent investments that are used in conjunction with derivatives positions or are used to provide liquidity for the payment of benefits or other purposes. The valuation inputs of securities are based on a spread to U.S. Treasury Bills, the Federal Funds Rate, or London Interbank Offered Rate and consider yields available on comparable securities of issuers with similar credit ratings and are primarily classified as Level 2. The commingled funds are valued at NAV based on the market value of the underlying investments using the same valuation inputs described above.

Derivative instruments: Derivative instruments are used to reduce risk as well as provide return. The gross notional exposure of the derivative instruments directly held by the Combined Pension Plan is shown below. The notional amount of the derivatives corresponds to market exposure but does not represent an actual cash investment. Our post-retirement plans were not invested in derivative instruments for the years ended December 31, 2020 or 2019.

Gross Notional Exposure		
Combined Pension Plan		
Years Ended December 31,		
	2020	2019
(Dollars in millions)		
Derivative instruments:		
Exchange-traded U.S. equity futures	\$ 84	184
Exchange-traded Treasury and other interest rate futures	1,033	1,253
Exchange-traded Foreign currency futures	12	—
Exchange-traded EURO futures	6	10
Interest rate swaps	124	44
Credit default swaps	43	205
Index swaps	1,297	2,058
Foreign exchange forwards	769	508
Options	222	146

Concentrations of Risk: Investments, in general, are exposed to various risks, such as significant world events, interest rate, credit, foreign currency and overall market volatility risk. These risks are managed by broadly diversifying assets across numerous asset classes and strategies with differing expected returns, volatilities and correlations. Risk is also broadly diversified across numerous market sectors and individual companies. Financial instruments that potentially subject the plans to concentrations of counterparty risk consist principally of investment contracts with high quality financial institutions. These investment contracts are typically collateralized obligations and/or are actively managed, limiting the amount of counterparty exposure to any one financial institution. Although the investments are well diversified, the value of plan assets could change materially depending upon the overall market volatility, which could affect the funded status of the plan.

The table below presents a rollforward of the Combined Pension Plan assets valued using Level 3 inputs:

Combined Pension Plan Assets Valued Using Level 3 Inputs				
	High Yield Bonds	U.S. Stocks	Private Debt	Total
(Dollars in millions)				
Balance at December 31, 2018	\$ 7	2	15	24
Acquisitions (dispositions)	(2)	—	1	(1)
Actual return on plan assets	—	(1)	—	(1)
Balance at December 31, 2019	5	1	16	22
Acquisitions (dispositions)	1	—	(17)	(16)
Actual return on plan assets	—	1	1	2
Balance at December 31, 2020	\$ 6	2	—	8

Certain gains and losses are allocated between assets sold during the year and assets still held at year-end based on transactions and changes in valuations that occurred during the year. These allocations also impact our calculation of net acquisitions and dispositions.

For the year ended December 31, 2020, the investment program produced actual gains on Combined Pension Plan assets of \$1.2 billion as compared to expected returns of \$593 million for a difference of \$618 million. For the year ended December 31, 2019, the investment program produced actual gains on Combined Pension Plan assets of \$1.6 billion as compared to the expected returns of \$618 million for a difference of \$1.0 billion. The short-term annual returns on plan assets will almost always be different from the expected long-term returns and the plans could experience net gains or losses, due primarily to the volatility occurring in the financial markets during any given year.

Unfunded Status

The following table presents the unfunded status of the Combined Pension Plan and post-retirement benefit plans:

	Combined Pension Plan		Post-Retirement Benefit Plans	
	Years Ended December 31,		Years Ended December 31,	
	2020	2019	2020	2019
	(Dollars in millions)			
Benefit obligation	\$ (12,202)	(12,217)	(3,048)	(3,037)
Fair value of plan assets	10,546	10,493	5	13
Unfunded status	(1,656)	(1,724)	(3,043)	(3,024)
Current portion of unfunded status	—	—	(228)	(224)
Non-current portion of unfunded status	\$ (1,656)	(1,724)	(2,815)	(2,800)

The current portion of our post-retirement benefit obligations is recorded on our consolidated balance sheets in accrued expenses and other current liabilities-salaries and benefits.

Accumulated Other Comprehensive Loss-Recognition and Deferrals

The following table presents cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2019, items recognized as a component of net periodic benefits expense in 2020, additional items deferred during 2020 and cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2020. The items not recognized as a component of net periodic benefits expense have been recorded on our consolidated balance sheets in accumulated other comprehensive loss:

	As of and for the Years Ended December 31,				
	2019	Recognition of Net Periodic Benefits Expense	Deferrals	Net Change in AOCL	2020
	(Dollars in millions)				
Accumulated other comprehensive loss:					
Pension plans:					
Net actuarial (loss) gain	\$ (3,046)	203	(150)	53	(2,993)
Prior service benefit (cost)	47	(9)	3	(6)	41
Deferred income tax benefit (expense)	770	(47)	32	(15)	755
Total pension plans	(2,229)	147	(115)	32	(2,197)
Post-retirement benefit plans:					
Net actuarial (loss) gain	(175)	—	(171)	(171)	(346)
Prior service (cost) benefit	(71)	16	35	51	(20)
Curtailment loss	—	4	—	4	4
Deferred income tax benefit (expense)	62	(5)	33	28	90
Total post-retirement benefit plans	(184)	15	(103)	(88)	(272)
Total accumulated other comprehensive loss	\$ (2,413)	162	(218)	(56)	(2,469)

The following table presents cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2018, items recognized as a component of net periodic benefits expense in 2019, additional items deferred during 2019 and cumulative items not recognized as a component of net periodic benefits expense as of December 31, 2018. The items not recognized as a component of net periodic benefits expense have been recorded on our consolidated balance sheets in accumulated other comprehensive loss:

As of and for the Years Ended December 31,					
	2018	Recognition of Net Periodic Benefits Expense	Deferrals	Net Change in AOCL	2019
	(Dollars in millions)				
Accumulated other comprehensive loss:					
Pension plans:					
Net actuarial (loss) gain	\$ (2,973)	224	(297)	(73)	(3,046)
Prior service benefit (cost)	46	(8)	9	1	47
Deferred income tax benefit (expense)	754	(53)	69	16	770
Total pension plans	(2,173)	163	(219)	(56)	(2,229)
Post-retirement benefit plans:					
Net actuarial gain (loss)	7	—	(182)	(182)	(175)
Prior service (cost) benefit	(87)	16	—	16	(71)
Deferred income tax benefit (expense)	22	(4)	44	40	62
Total post-retirement benefit plans	(58)	12	(138)	(126)	(184)
Total accumulated other comprehensive (loss) income	\$ (2,231)	175	(357)	(182)	(2,413)

Medicare Prescription Drug, Improvement and Modernization Act of 2003

We sponsor post-retirement health care plans with several benefit options that provide prescription drug benefits that we deem actuarially equivalent to or exceeding Medicare Part D. We recognize the impact of the federal subsidy received under the Medicare Prescription Drug, Improvement and Modernization Act of 2003 in the calculation of our post-retirement benefit obligation and net periodic post-retirement benefit expense.

Other Benefit Plans

Health Care and Life Insurance

We provide health care and life insurance benefits to essentially all of our active employees. We are largely self-funded for the cost of the health care plan. Our health care benefit expense for current employees was \$307 million, \$381 million and \$434 million for the years ended December 31, 2020, 2019 and 2018, respectively. Union-represented employee benefits are based on negotiated collective bargaining agreements. Employees contributed \$133 million, \$148 million, \$142 million for the years ended December 31, 2020, 2019 and 2018, respectively. Our group basic life insurance plans are fully insured and the premiums are paid by us.

401(k) Plans

We sponsor a qualified defined contribution plan covering substantially all of our U.S. employees. Under this plan, employees may contribute a percentage of their annual compensation up to certain maximums, as defined by the plan and by the Internal Revenue Service ("IRS"). Currently, we match a percentage of employee contributions in cash. At December 31, 2020 and 2019, the assets of the plan included approximately 11 million shares of our common stock all of which were the result of the combination of previous employer match and participant directed contributions. We recognized expenses related to this plan of \$101 million, \$113 million and \$93 million for the years ended December 31, 2020, 2019 and 2018, respectively.

Deferred Compensation Plans

We sponsored non-qualified deferred compensation plans for various groups that included certain of our current and former highly compensated employees. The value of liabilities related to these plans was not significant.

(11) Share-based Compensation

We maintain an equity incentive program that allows our Board of Directors (through its Compensation Committee or a senior officer acting under delegated authority) to grant incentives to certain employees and outside directors in one or more forms, including: incentive and non-qualified stock options, stock appreciation rights, restricted stock awards, restricted stock units and market and performance shares. Stock options generally expire ten years from the date of grant.

Stock Options

We had 469,000 options outstanding as of December 31, 2019. The total intrinsic value of options exercised for the years ended December 31, 2019 and 2018, was less than \$1 million each year. During 2020, virtually all remaining stock options expired or were forfeited.

Restricted Stock Awards and Restricted Stock Unit Awards

For equity based restricted stock and restricted stock unit awards that contain only service conditions for vesting (time-based awards), we calculate the award fair value based on the closing price of Lumen Technologies common stock on the accounting grant date. We also grant equity-based awards that contain service conditions as well as additional market or performance conditions. For awards having both service and market conditions, the award fair value is calculated using Monte-Carlo simulations. Awards with service as well as market or performance conditions specify a target number of shares for the award, although each recipient ultimately has the opportunity to receive between 0% and 200% of the target number of shares. For awards with service and market conditions, the percentage received is based on our total shareholder return over the three-year service period versus that of selected peer companies. For awards with service and performance conditions, the percentage received depends upon the attainment of one or more financial performance targets during the two- or three-year service period.

The following table summarizes activity involving restricted stock and restricted stock unit awards for the year ended December 31, 2020:

	Number of Shares (in thousands)	Weighted- Average Grant Date Fair Value
Non-vested at December 31, 2019	16,044	\$ 15.42
Granted	17,812	12.08
Vested	(10,512)	16.38
Forfeited	(1,836)	13.25
Non-vested at December 31, 2020	21,508	12.37

During 2020, we granted 17.8 million shares of restricted stock and restricted stock unit awards at a weighted-average price of \$12.08. During 2019, we granted 9.8 million shares of restricted stock and restricted stock unit awards at a weighted-average price of \$12.41. During 2018, we granted 9.7 million shares of restricted stock and restricted stock unit awards at a weighted-average price of \$17.02. The total fair value of restricted stock that vested during 2020, 2019 and 2018, was \$126 million, \$118 million and \$169 million, respectively. We do not estimate forfeitures, but recognize them as they occur.

Compensation Expense and Tax Benefit

We recognize compensation expense related to our market and performance share-based awards with graded vesting that only have a service condition on a straight-line basis over the requisite service period for the entire award. Total compensation expense for all share-based payment arrangements for the years ended December 31, 2020, 2019 and 2018, was \$175 million, \$162 million and \$186 million, respectively. Our tax benefit recognized in the consolidated statements of operations for our share-based payment arrangements for the years ended December 31, 2020, 2019 and 2018, was \$43 million, \$39 million and \$46 million, respectively. At December 31, 2020, there was \$117 million of total unrecognized compensation expense related to our share-based payment arrangements, which we expect to recognize over a weighted-average period of 1.5 years.

(12) Loss Per Common Share

Basic and diluted loss per common share for the years ended December 31, 2020, 2019 and 2018 were calculated as follows:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions, except per share amounts, shares in thousands)		
Loss (Numerator):			
Net loss	\$ (1,232)	(5,269)	(1,733)
Net loss applicable to common stock for computing basic earnings per common share	(1,232)	(5,269)	(1,733)
Net loss as adjusted for purposes of computing diluted earnings per common share	\$ (1,232)	(5,269)	(1,733)
Shares (Denominator):			
Weighted average number of shares:			
Outstanding during period	1,096,284	1,088,730	1,078,409
Non-vested restricted stock	(17,154)	(17,289)	(12,543)
Weighted average shares outstanding for computing basic earnings per common share	1,079,130	1,071,441	1,065,866
Incremental common shares attributable to dilutive securities:			
Shares issuable under convertible securities	—	—	—
Shares issuable under incentive compensation plans	—	—	—
Number of shares as adjusted for purposes of computing diluted loss per common share	1,079,130	1,071,441	1,065,866
Basic loss per common share	\$ (1.14)	(4.92)	(1.63)
Diluted loss per common share ⁽¹⁾	\$ (1.14)	(4.92)	(1.63)

⁽¹⁾ For the years ended December 31, 2020, December 31, 2019 and December 31, 2018, we excluded from the calculation of diluted loss per share 5.3 million shares, 3.0 million shares and 4.6 million shares, respectively, potentially issuable under incentive compensation plans or convertible securities, as their effect, if included, would have been anti-dilutive.

Our calculation of diluted loss per common share excludes shares of common stock that are issuable upon exercise of stock options when the exercise price is greater than the average market price of our common stock. We also exclude unvested restricted stock awards that are antidilutive as a result of unrecognized compensation cost. Such shares were 3.2 million, 6.8 million and 2.7 million for 2020, 2019 and 2018, respectively.

(13) Fair Value of Financial Instruments

Our financial instruments consist of cash, cash equivalents and restricted cash, accounts receivable, accounts payable and long-term debt, excluding finance lease and other obligations, and interest rate swap contracts. Due to their short-term nature, the carrying amounts of our cash, cash equivalents and restricted cash, accounts receivable and accounts payable approximate their fair values.

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between independent and knowledgeable parties who are willing and able to transact for an asset or liability at the measurement date. We use valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs when determining fair value and then we rank the estimated values based on the reliability of the inputs used following the fair value hierarchy set forth by the FASB.

We determined the fair values of our long-term debt, including the current portion, based on quoted market prices where available or, if not available, based on discounted future cash flows using current market interest rates.

The three input levels in the hierarchy of fair value measurements are defined by the FASB generally as follows:

Input Level	Description of Input
Level 1	Observable inputs such as quoted market prices in active markets.
Level 2	Inputs other than quoted prices in active markets that are either directly or indirectly observable.
Level 3	Unobservable inputs in which little or no market data exists.

The following table presents the carrying amounts and estimated fair values of our long-term debt, excluding finance lease and other obligations, as well as the input level used to determine the fair values indicated below:

	Input Level	As of December 31, 2020		As of December 31, 2019	
		Carrying Amount	Fair Value	Carrying Amount	Fair Value
(Dollars in millions)					
Liabilities-Long-term debt, excluding finance lease and other obligations	2	\$ 31,542	33,217	34,472	35,737
Interest rate swap contracts (see Note 14)	2	107	107	51	51

(14) Derivative Financial Instruments

From time to time, we use derivative financial instruments, primarily interest rate swaps, to manage our exposure to fluctuations in interest rates. Our primary objective in managing interest rate risk is to decrease the volatility of our earnings and cash flows affected by changes in the underlying rates. We have floating rate long-term debt (see Note 6—Long-Term Debt and Credit Facilities of this report). These obligations expose us to variability in interest payments due to changes in interest rates. If interest rates increase, interest expense increases. Conversely, if interest rates decrease, interest expense also decreases. We have designated our currently outstanding interest rate swap agreements as cash flow hedges. As described further below, under these hedges, we receive variable-rate amounts from a counterparty in exchange for us making fixed-rate payments over the lives of the agreements without exchange of the underlying notional amount. The change in the fair value of the interest rate swap agreements is reflected in AOCI and, as described below, is subsequently reclassified into earnings in the period that the hedged transaction affects earnings by virtue of qualifying as effective cash flow hedges. We do not use derivative financial instruments for speculative purposes.

In February 2019, we entered into five variable-to-fixed interest rate swap agreements to hedge the interest payments on \$2.5 billion notional amount of floating rate debt. The five interest rate swap agreements are with different counterparties; one for \$700 million and the other four for \$450 million each. The transactions were effective beginning March 31, 2019 and mature March 31, 2022. Under the terms of these interest rate swap transactions, we receive interest payments based on one month floating LIBOR terms and pay interest at the fixed rate of 2.48%.

In June 2019, we entered into six variable-to-fixed interest rate swap agreements to hedge the interest payments on \$1.5 billion notional amount of floating rate debt. The six interest rate swap agreements are with different counterparties for \$250 million each. The transactions were effective beginning June 30, 2019 and mature June 30, 2022. Under the terms of these interest rate swap transactions, we receive interest payments based on one month floating LIBOR terms and pay interest at the fixed rate of 1.58%.

As of December 31, 2020 and 2019, we evaluated the effectiveness of our hedges quantitatively and any hedges we had entered into at the time qualified as effective hedge relationships.

We may be exposed to credit related losses in the event of non-performance by counterparties. The counterparties to any of the financial derivatives we enter into are major institutions with investment grade credit ratings. We evaluate counterparty credit risk before entering into any hedge transaction and continue to closely monitor the financial market and the risk that our counterparties will default on their obligations as part of our quarterly qualitative effectiveness evaluation.

Amounts accumulated in AOCI related to derivatives are indirectly recognized in earnings as periodic settlement payments are made throughout the term of the swaps.

The table below presents the fair value of our derivative financial instruments as well as their classification on the consolidated balance sheet at December 31, 2020 as follows (in millions):

Derivatives designated as	Balance Sheet Location	December 31, 2020	December 31, 2019
		Fair Value	
Cash flow hedging contracts	Other current and noncurrent liabilities	\$ 107	51

The amount of unrealized (gains) losses recognized in AOCI consists of the following (in millions):

Derivatives designated as hedging instruments	2020	2019
Cash flow hedging contracts		
Years Ended December 31,	\$ 115	53

The amount of realized losses reclassified in AOCI to the statement of operations consists of the following (in millions):

Derivatives designated as hedging instruments	2020	2019
Cash flow hedging contracts		
Years Ended December 31,	\$ 62	2

Amounts currently included in AOCI will be reclassified into earnings prior to the ongoing settlements of these cash flow hedging contracts until 2022. We estimate that \$82 million of net losses on the interest rate swaps (based on the estimated LIBOR curve as of December 31, 2020) will be reflected in our statements of operations within the next 12 months.

(15) Income Taxes

The components of the income tax expense are as follows:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Income tax expense:			
Federal			
Current	\$ 5	7	(576)
Deferred	338	376	734
State			
Current	50	15	(22)
Deferred	55	81	52
Foreign			
Current	29	35	36
Deferred	(27)	(11)	(54)
Total income tax expense	\$ 450	503	170

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Income tax expense was allocated as follows:			
Income tax expense in the consolidated statements of operations:			
Attributable to income	\$ 450	503	170
Stockholders' equity:			
Tax effect of the change in accumulated other comprehensive loss	\$ 17	(62)	(2)

The following is a reconciliation from the statutory federal income tax rate to our effective income tax rate:

	Years Ended December 31,		
	2020	2019	2018
	(Percentage of pre-tax income)		
Statutory federal income tax rate	21.0 %	21.0 %	21.0 %
State income taxes, net of federal income tax benefit	(10.8)%	(1.6)%	(1.5)%
Goodwill impairment	(71.0)%	(28.6)%	(36.6)%
Change in liability for unrecognized tax position	(0.6)%	(0.2)%	1.3 %
Legislative changes to GILTI	1.8 %	— %	— %
Nondeductible executive stock compensation	(1.6)%	(0.1)%	— %
Change in valuation allowance	2.6 %	— %	— %
Tax reform	— %	— %	(5.9)%
Net foreign income taxes	(0.6)%	(0.5)%	1.8 %
Research and development credits	1.6 %	0.1 %	0.9 %
Tax benefit of net operating loss carryback	— %	— %	9.1 %
Other, net	0.1 %	(0.7)%	(1.0)%
Effective income tax rate	(57.5)%	(10.6)%	(10.9)%

The effective tax rate for the year ended December 31, 2020 reflects a \$555 million unfavorable impact of non-deductible goodwill impairment, a \$14 million favorable impact in tax regulations passed in 2020 allowing a high tax exception related to our tax exposure of Global Intangible Low-Taxed Income ("GILTI"), as well as a \$20 million benefit related to the release of previously established valuation allowances against capital losses. The effective tax rates for the years ended December 31, 2019 and December 31, 2018 include a \$1.4 billion and a \$572 million unfavorable impact of non-deductible goodwill impairments, respectively. Additionally, the effective tax rate for the year ended December 31, 2018 reflects a \$92 million unfavorable impact due to finalizing the impacts of tax reform. Partially offsetting these amounts is a \$142 million benefit generated by a loss carryback to 2016.

The tax effects of temporary differences that gave rise to significant portions of the deferred tax assets and deferred tax liabilities were as follows:

	As of December 31,	
	2020	2019
	(Dollars in millions)	
Deferred tax assets		
Post-retirement and pension benefit costs	\$ 1,164	1,169
Net operating loss carryforwards	3,138	3,167
Other employee benefits	119	134
Other	604	577
Gross deferred tax assets	5,025	5,047
Less valuation allowance	(1,538)	(1,319)
Net deferred tax assets	3,487	3,728
Deferred tax liabilities		
Property, plant and equipment, primarily due to depreciation differences	(3,882)	(3,489)
Goodwill and other intangible assets	(2,755)	(3,019)
Gross deferred tax liabilities	(6,637)	(6,508)
Net deferred tax liability	\$ (3,150)	(2,780)

Of the \$3.2 billion and \$2.8 billion net deferred tax liability at December 31, 2020 and 2019, respectively, \$3.3 billion and \$2.9 billion is reflected as a long-term liability and \$191 million and \$118 million is reflected as a net noncurrent deferred tax asset, in other, net on our consolidated balance sheets at December 31, 2020 and 2019, respectively.

At December 31, 2020, we had federal NOLs of \$5.1 billion, net of limitations of Section 382 of the Internal Revenue Code ("Section 382") and uncertain tax positions, for U.S. federal income tax purposes. If unused, the NOLs will expire between 2023 and 2037. The U.S. federal net operating loss carryforwards expire as follows:

	Expiring December 31,	Amount (Dollars in millions)
2024		\$ 745
2025		1,042
2026		1,525
2027		375
2028		637
2029		645
2030		668
2031		733
2032		348
2033		238
2037		2,976
NOLs per return		9,932
Uncertain tax positions		(4,855)
Financial NOLs		<u>\$ 5,077</u>

We expect to use substantially all of these tax attributes to reduce our future federal tax liabilities, although the timing of that use will depend upon our future earnings and future tax circumstances.

At December 31, 2020 we had state net operating loss carryforwards of \$17 billion (net of uncertain tax positions). We also had foreign NOL carryforwards of \$7 billion. Our acquisitions of Level 3, Qwest and SAVVIS, Inc. caused "ownership changes" within the meaning of Section 382 for the acquired companies. As a result, our ability to use these NOLs and tax credits are subject to annual limits imposed by Section 382.

We establish valuation allowances when necessary to reduce the deferred tax assets to amounts we expect to realize. As of December 31, 2020, a valuation allowance of \$1.5 billion was established as it is more likely than not that this amount of net operating loss, capital loss and tax credit carryforwards will not be utilized prior to expiration. Our valuation allowance at December 31, 2020 and 2019 is primarily related to foreign and state NOL carryforwards. This valuation allowance increased by \$219 million during 2020, primarily due to the impact of foreign exchange rate adjustments and state law changes.

A reconciliation of the change in our gross unrecognized tax benefits (excluding both interest and any related federal benefit) from January 1 to December 31 for 2020 and 2019 is as follows:

	2020	2019
	(Dollars in millions)	
Unrecognized tax benefits at beginning of year	\$ 1,538	1,587
Increase in tax positions of the current year netted against deferred tax assets	18	11
Increase in tax positions of prior periods netted against deferred tax assets	5	6
Decrease in tax positions of the current year netted against deferred tax assets	(86)	(49)
Decrease in tax positions of prior periods netted against deferred tax assets	(5)	(19)
Increase in tax positions taken in the current year	4	5
Increase in tax positions taken in the prior year	1	10
Decrease due to payments/settlements	(1)	(8)
Decrease due to the reversal of tax positions taken in a prior year	—	(5)
Unrecognized tax benefits at end of year	<u>\$ 1,474</u>	<u>1,538</u>

The total amount (including both interest and any related federal benefit) of unrecognized tax benefits that, if recognized, would impact the effective income tax rate was \$267 million and \$259 million at December 31, 2020 and 2019, respectively.

Our policy is to reflect interest expense associated with unrecognized tax benefits in income tax expense. We had accrued interest (presented before related tax benefits) of approximately \$23 million and \$15 million at December 31, 2020 and 2019, respectively.

We, or at least one of our subsidiaries, file income tax returns in the U.S. federal jurisdiction and various states and foreign jurisdictions. With few exceptions, we are no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations by tax authorities for years before 2002. The Internal Revenue Service and state and local taxing authorities reserve the right to audit any period where net operating loss carryforwards are available.

Based on our current assessment of various factors, including (i) the potential outcomes of these ongoing examinations, (ii) the expiration of statute of limitations for specific jurisdictions, (iii) the negotiated settlement of certain disputed issues, and (iv) the administrative practices of applicable taxing jurisdictions, it is reasonably possible that the related unrecognized tax benefits for uncertain tax positions previously taken may decrease by up to \$3 million within the next 12 months. The actual amount of such decrease, if any, will depend on several future developments and events, many of which are outside our control.

(16) Segment Information

As described in more detail below, our segments are managed based on the direct costs of providing services to their customers and the associated selling, general and administrative costs (primarily salaries and commissions). Shared costs are managed separately and included in "Operations and Other" in the tables below. We reclassified certain prior period amounts to conform to the current period presentation. See Note 1—Background and Summary of Significant Accounting Policies for further detail on these changes.

At December 31, 2020, we had the following five reportable segments:

- *International and Global Accounts Management ("IGAM") Segment.* Under our IGAM segment, we provide our products and services to approximately 200 global enterprise customers and to enterprises and carriers in three operating regions: Europe Middle East and Africa, Latin America and Asia Pacific;
- *Enterprise Segment.* Under our enterprise segment, we provide our products and services to large and regional domestic and global enterprises, as well as public sector, which includes the U.S. federal government, state and local governments and research and education institutions;
- *Small and Medium Business ("SMB") Segment.* Under our SMB segment, we provide our products and services to small and medium businesses directly and indirectly through our channel partners;
- *Wholesale Segment.* Under our wholesale segment, we provide our products and services to a wide range of other communication providers across the wireline, wireless, cable, voice and data center sectors. Our wholesale customers range from large global telecom providers to small regional providers; and
- *Consumer Segment.* Under our consumer segment, we provide our products and services to residential customers. Additionally, Connect America Fund ("CAF") federal support revenue, and other revenue from leasing and subleasing are reported in our consumer segment as regulatory revenue.

Product and Service Categories

At December 31, 2020, we categorized our products and services revenue among the following four categories for the IGAM, Enterprise, SMB and Wholesale segments:

- *IP and Data Services*, which includes primarily VPN data networks, Ethernet, IP, content delivery and other ancillary services;

- *Transport and Infrastructure*, which includes wavelengths, dark fiber, private line, colocation and data center services, including cloud, hosting and application management solutions, professional services and other ancillary services;
- *Voice and Collaboration*, which includes primarily local and long-distance voice, including wholesale voice, and other ancillary services, as well as VoIP services; and
- *IT and Managed Services*, which includes information technology services and managed services, which may be purchased in conjunction with our other network services.

At December 31, 2020, we categorized our products and services revenue among the following four categories for the Consumer segment:

- *Broadband*, which includes high-speed, fiber based and lower speed DSL broadband services;
- *Voice*, which includes local and long-distance services;
- *Regulatory Revenue*, which consists of (i) CAF and other support payments designed to reimburse us for various costs related to certain telecommunications services and (ii) other operating revenue from the leasing and subleasing of space; and
- *Other*, which includes retail video services (including our linear and TV services), professional services and other ancillary services.

The following tables summarize our segment results for 2020, 2019 and 2018 based on the segment categorization we were operating under at December 31, 2020.

	Year Ended December 31, 2020							
	International and Global Accounts	Enterprise	Small and Medium Business	Wholesale	Consumer	Total Segments	Operations and Other	Total
(Dollars in millions)								
Revenue:								
IP and Data Services	\$ 1,556	2,474	1,062	1,280	—	6,372	—	6,372
Transport and Infrastructure	1,265	1,608	352	1,764	—	4,989	—	4,989
Voice and Collaboration	368	1,424	1,098	731	—	3,621	—	3,621
IT and Managed Services	216	216	45	2	—	479	—	479
Broadband	—	—	—	—	2,909	2,909	—	2,909
Voice	—	—	—	—	1,622	1,622	—	1,622
Regulatory	—	—	—	—	615	615	—	615
Other	—	—	—	—	105	105	—	105
Total revenue	3,405	5,722	2,557	3,777	5,251	20,712	—	20,712
Expenses:								
Cost of services and products	935	1,878	382	489	173	3,857	5,077	8,934
Selling, general and administrative	242	510	406	67	466	1,691	1,773	3,464
Less: share-based compensation	—	—	—	—	—	—	(175)	(175)
Total expense	1,177	2,388	788	556	639	5,548	6,675	12,223
Total adjusted EBITDA	\$ 2,228	3,334	1,769	3,221	4,612	15,164	(6,675)	8,489

Year Ended December 31, 2019								
	International and Global Accounts	Enterprise	Small and Medium Business	Wholesale	Consumer	Total Segments	Operations and Other	Total
(Dollars in millions)								
Revenue:								
IP and Data Services	\$ 1,627	2,538	1,091	1,365	—	6,621	—	6,621
Transport and Infrastructure	1,268	1,479	365	1,907	—	5,019	—	5,019
Voice and Collaboration	354	1,423	1,226	763	—	3,766	—	3,766
IT and Managed Services	227	256	45	7	—	535	—	535
Broadband	—	—	—	—	2,876	2,876	—	2,876
Voice	—	—	—	—	1,837	1,837	—	1,837
Regulatory	—	—	—	—	632	632	—	632
Other	—	—	—	—	172	172	—	172
Total revenue	3,476	5,696	2,727	4,042	5,517	21,458	—	21,458
Expenses:								
Cost of services and products	920	1,768	399	535	197	3,819	5,315	9,134
Selling, general and administrative	261	545	459	58	521	1,844	1,871	3,715
Less: share-based compensation	—	—	—	—	—	—	(162)	(162)
Total expense	1,181	2,313	858	593	718	5,663	7,024	12,687
Total adjusted EBITDA	\$ 2,295	3,383	1,869	3,449	4,799	15,795	(7,024)	8,771

Year Ended December 31, 2018								
	International and Global Accounts	Enterprise	Small and Medium Business	Wholesale	Consumer	Total Segments	Operations and Other	Total
(Dollars in millions)								
Revenue:								
IP and Data Services	\$ 1,682	2,485	1,078	1,369	—	6,614	—	6,614
Transport and Infrastructure	1,230	1,484	424	2,118	—	5,256	—	5,256
Voice and Collaboration	365	1,495	1,366	865	—	4,091	—	4,091
IT and Managed Services	266	301	50	8	—	625	—	625
Broadband	—	—	—	—	2,824	2,824	—	2,824
Voice	—	—	—	—	2,127	2,127	—	2,127
Regulatory	—	—	—	—	727	727	—	727
Other	—	—	—	—	316	316	—	316
Total revenue	3,543	5,765	2,918	4,360	5,994	22,580	—	22,580
Expenses:								
Cost of services and products	940	1,844	416	567	356	4,123	5,876	9,999
Selling, general and administrative	249	567	490	62	617	1,985	2,180	4,165
Less: share-based compensation	—	—	—	—	—	—	(186)	(186)
Total expense	1,189	2,411	906	629	973	6,108	7,870	13,978
Total adjusted EBITDA	\$ 2,354	3,354	2,012	3,731	5,021	16,472	(7,870)	8,602

Revenue and Expenses

Our segment revenue includes all revenue from our five segments as described in more detail above. Our segment revenue is based upon each customer's classification. We report our segment revenue based upon all services provided to that segment's customers. Our segment expenses include specific cost of service expenses incurred as a direct result of providing services and products to segment customers, along with selling, general and administrative expenses that are directly associated with specific segment customers or activities.

The following items are excluded from our segment results, because they are centrally managed and not monitored by or reported to our chief operating decision maker by segment:

- network expenses not incurred as a direct result of providing services and products to segment customers;
- centrally managed expenses such as Operations, Finance, Human Resources, Legal, Marketing, Product Management and IT, which are reported as "Other operating expenses" in the table below;
- depreciation and amortization expense or impairments;
- interest expense, because we manage our financing on a consolidated basis and have not allocated assets or debt to specific segments;
- stock-based compensation; and
- other income and expense items are not monitored as a part of our segment operations.

The following table reconciles total segment adjusted EBITDA to net loss for the years ended December 31, 2020, 2019 and 2018:

	Years Ended December 31,		
	2020	2019	2018
	(Dollars in millions)		
Total segment adjusted EBITDA	\$ 15,164	15,795	16,472
Depreciation and amortization	(4,710)	(4,829)	(5,120)
Goodwill impairment	(2,642)	(6,506)	(2,726)
Other operating expenses	(6,675)	(7,024)	(7,870)
Share-based compensation	(175)	(162)	(186)
Operating income (loss)	962	(2,726)	570
Total other expense, net	(1,744)	(2,040)	(2,133)
Loss before income taxes	(782)	(4,766)	(1,563)
Income tax expense	450	503	170
Net loss	\$ (1,232)	(5,269)	(1,733)

We do not have any single customer that provides more than 10% of our consolidated total operating revenue.

The assets we hold outside of the U.S. represent less than 10% of our total assets. Revenue from sources outside of the U.S. is responsible for less than 10% of our total operating revenue.

(17) Commitments, Contingencies and Other Items

We are subject to various claims, legal proceedings and other contingent liabilities, including the matters described below, which individually or in the aggregate could materially affect our financial condition, future results of operations or cash flows. As a matter of course, we are prepared to both litigate these matters to judgment as needed, as well as to evaluate and consider reasonable settlement opportunities.

Irrespective of its merits, litigation may be both lengthy and disruptive to our operations and could cause significant expenditure and diversion of management attention. We review our litigation accrual liabilities on a quarterly basis, but in accordance with applicable accounting guidelines only establish accrual liabilities when losses are deemed probable and reasonably estimable and only revise previously-established accrual liabilities when warranted by changes in circumstances, in each case based on then-available information. As such, as of any given date we could have exposure to losses under proceedings as to which no liability has been accrued or as to which the accrued liability is inadequate. Amounts accrued for our litigation and non-income tax contingencies at December 31, 2020 and December 31, 2019 aggregated to approximately \$141 million and \$180 million, respectively, and are included in other current liabilities and other liabilities in our consolidated balance sheet as of such date. The establishment of an accrual does not mean that actual funds have been set aside to satisfy a given contingency. Thus, the resolution of a particular contingency for the amount accrued could have no effect on our results of operations but nonetheless could have an adverse effect on our cash flows.

In this Note, when we refer to a class action as "putative" it is because a class has been alleged, but not certified in that matter.

Principal Proceedings

Shareholder Class Action Suit

Lumen and certain Lumen Board of Directors members and officers were named as defendants in a putative shareholder class action lawsuit filed on June 12, 2018 in the Boulder County District Court of the state of Colorado, captioned Houser et al. v. CenturyLink, et al. The complaint asserts claims on behalf of a putative class of former Level 3 shareholders who became CenturyLink, Inc. shareholders as a result of our acquisition of Level 3. It alleges that the proxy statement provided to the Level 3 shareholders failed to disclose various material information of several kinds, including information about strategic revenue, customer loss rates, and customer account issues, among other items. The complaint seeks damages, costs and fees, rescission, rescissory damages, and other equitable relief. In May 2020, the court dismissed the complaint. Plaintiffs appealed that decision, and the appeal is pending.

State Tax Suits

Since 2012, a number of Missouri municipalities have asserted claims in the Circuit Court of St. Louis County, Missouri, alleging that we and several of our subsidiaries have underpaid taxes. These municipalities are seeking, among other things, declaratory relief regarding the application of business license and gross receipts taxes and back taxes from 2007 to the present, plus penalties and interest. In a February 2017 ruling in connection with one of these pending cases, the court entered an order awarding plaintiffs \$4 million and broadening the tax base on a going-forward basis. We appealed that decision to the Missouri Supreme Court. In December 2019, it affirmed the circuit court's order in some respects and reversed it in others, remanding the case to the circuit court for further proceedings. The Missouri Supreme Court's decision reduced our exposure in the case. In a June 2017 ruling in connection with another one of these pending cases, the circuit court made findings in a non-final ruling which, if not overturned or modified in light of the Missouri Supreme Court's decision, will result in a tax liability to us well in excess of the contingent liability we have established. The circuit court has indicated it does not intend to alter its 2017 ruling when it issues its final decision. Once a final decision is issued, we will have the right to pursue an appeal. We continue to vigorously defend against these claims.

Billing Practices Suits

In June 2017, a former employee filed an employment lawsuit against us claiming that she was wrongfully terminated for alleging that we charged some of our retail customers for products and services they did not authorize. Thereafter, based in part on the allegations made by the former employee, several legal proceedings were filed.

In June 2017, *McLeod v. CenturyLink*, a consumer class action, was filed against us in the U.S. District Court for the Central District of California alleging that we charged some of our retail customers for products and services they did not authorize. Other complaints asserting similar claims were filed in other federal and state courts. The lawsuits assert claims including fraud, unfair competition, and unjust enrichment. Also in June 2017, *Craig v. CenturyLink, Inc., et al.*, a securities investor class action, was filed in U.S. District Court for the Southern District of New York, alleging that we failed to disclose material information regarding improper sales practices, and asserting federal securities law claims. A number of other cases asserting similar claims have also been filed.

Beginning June 2017, we also received several shareholder derivative demands addressing related topics. In August 2017, the Board of Directors formed a special litigation committee of outside directors to address the allegations of impropriety contained in the shareholder derivative demands. In April 2018, the special litigation committee concluded its review of the derivative demands and declined to take further action. Since then, derivative cases were filed in Louisiana state court in the Fourth Judicial District Court for the Parish of Ouachita and in federal court in Louisiana and Minnesota. These cases were brought on behalf of CenturyLink, Inc. against certain current and former officers and directors of the Company and seek damages for alleged breaches of fiduciary duties.

The consumer class actions, the securities investor class actions, and the federal derivative actions were transferred to the U.S. District Court for the District of Minnesota for coordinated and consolidated pretrial proceedings as *In Re: CenturyLink Sales Practices and Securities Litigation*.

We received final court approval of our settlement of the consumer class actions for payments totaling \$15.5 million, plus certain notice and administration costs. Approximately 12,000 potential class members elected to opt out of the class settlement and may elect to pursue their individual claims against us on these issues through various dispute resolution processes, including individual arbitration. Subject to certain conditions, we have agreed to settle claims of approximately 11,000 such class members asserted by one law firm. Additionally, we have reached an agreement settling the securities investor class actions for payment of \$55 million, which we expect to be paid by our insurers. The settlement of the securities investor class claims is subject to court approval.

We have engaged in discussions regarding related claims with a number of state attorneys general, and have entered into agreements settling certain of the consumer practices claims asserted by state attorneys general. While we do not agree with allegations raised in these matters, we have been willing to consider reasonable settlements where appropriate.

Peruvian Tax Litigation

In 2005, the Peruvian tax authorities ("SUNAT") issued tax assessments against one of our Peruvian subsidiaries asserting \$26 million, of additional income tax withholding and value-added taxes ("VAT"), penalties and interest for calendar years 2001 and 2002 on the basis that the Peruvian subsidiary incorrectly documented its importations. After taking into account the developments described below, as well as the accrued interest and foreign exchange effects, we believe the total amount of our exposure is \$2 million at December 31, 2020.

We challenged the assessments via administrative and then judicial review processes. In October 2011, the highest administrative review tribunal (the Tribunal) decided the central issue underlying the 2002 assessments in SUNAT's favor. We appealed the Tribunal's decision to the first judicial level, which decided the central issue in favor of Level 3. SUNAT and we filed cross-appeals with the court of appeal. In May 2017, the court of appeal issued a decision reversing the first judicial level. In June 2017, we filed an appeal of the decision to the Supreme Court of Justice, the final judicial level. Oral argument was held before the Supreme Court of Justice in October 2018. A decision on this case is pending.

In October 2013, the Tribunal decided the central issue underlying the 2001 assessments in SUNAT's favor. We appealed that decision to the first judicial level in Peru, which decided the central issue in favor of SUNAT. In June 2017, we filed an appeal with the court of appeal. In November 2017, the court of appeals issued a decision affirming the first judicial level and we filed an appeal of the decision to the Supreme Court of Justice. Oral argument was held before the Supreme Court of Justice in June 2019. A decision on this case is pending.

Brazilian Tax Claims

The São Paulo and Rio de Janeiro state tax authorities have issued tax assessments against our Brazilian subsidiaries for the Tax on Distribution of Goods and Services ("ICMS"), mainly with respect to revenue from leasing certain assets and revenue from the provision of Internet access services by treating such activities as the provision of communications services, to which the ICMS tax applies. We filed objections to these assessments in both states, arguing among other things that neither the lease of assets nor the provision of Internet access qualifies as "communication services" subject to ICMS.

We have appealed to the respective state judicial courts the decisions by the respective state administrative courts that rejected our objections to these assessments. In cases in which state lower courts ruled partially in our favor finding that the lease assets are not subject to ICMS, the State appealed those rulings. In other cases, the assessment was affirmed at the first administrative level and we have appealed to the second administrative level. Other assessments are still pending state judicial decisions.

We are vigorously contesting all such assessments in both states and view the assessment of ICMS on revenue from equipment leasing and Internet access to be without merit. We estimate that these assessments, if upheld, could result in a loss of \$17 million to as high as \$49 million as of December 31, 2020, in excess of the reserved accruals established for these matters.

Qui Tam Action

Level 3 was notified in late 2017 of a qui tam action pending against Level 3 Communications, Inc. and others in the U.S. District Court for the Eastern District of Virginia, captioned United States of America ex rel., Stephen Bishop v. Level 3 Communications, Inc. et al. The original qui tam complaint and an amended complaint were filed under seal on November 26, 2013 and June 16, 2014, respectively. The court unsealed the complaints on October 26, 2017.

The amended complaint alleges that Level 3, principally through two former employees, submitted false claims and made false statements to the government in connection with two government contracts. The relator seeks damages in this lawsuit of approximately \$50 million, subject to trebling, plus statutory penalties, pre-and-post judgment interest, and attorney's fees. The case is currently stayed.

Level 3 is evaluating its defenses to the claims. At this time, Level 3 does not believe it is probable Level 3 will incur a material loss. If, contrary to its expectations, the plaintiff prevails in this matter and proves damages at or near \$50 million, and is successful in having those damages trebled, the outcome could have a material adverse effect on our results of operations in the period in which a liability is recognized and on our cash flows for the period in which any damages are paid.

Several people, including two former Level 3 employees were indicted in the U.S. District Court for the Eastern District of Virginia on October 3, 2017, and charged with, among other things, accepting kickbacks from a subcontractor, who was also indicted, for work to be performed under a prime government contract. Of the two former employees, one entered into a plea agreement, and the other is deceased. Level 3 is fully cooperating in the government's investigations in this matter.

Other Proceedings, Disputes and Contingencies

From time to time, we are involved in other proceedings incidental to our business, including patent infringement allegations, regulatory hearings relating primarily to our rates or services, actions relating to employee claims, various tax issues, environmental law issues, grievance hearings before labor regulatory agencies and miscellaneous third party tort actions.

We are currently defending several patent infringement lawsuits asserted against us by non-practicing entities, many of which are seeking substantial recoveries. These cases have progressed to various stages and one or more may go to trial during 2021 if they are not otherwise resolved. Where applicable, we are seeking full or partial indemnification from our vendors and suppliers. As with all litigation, we are vigorously defending these actions and, as a matter of course, are prepared to litigate these matters to judgment, as well as to evaluate and consider all reasonable settlement opportunities.

We are subject to various foreign, federal, state and local environmental protection and health and safety laws. From time to time, we are subject to judicial and administrative proceedings brought by various governmental authorities under these laws. Several such proceedings are currently pending, but none is reasonably expected to exceed \$300,000 in fines and penalties.

The outcome of these other proceedings described under this heading is not predictable. However, based on current circumstances, we do not believe that the ultimate resolution of these other proceedings, after considering available defenses and any insurance coverage or indemnification rights, will have a material adverse effect on us.

The matters listed above in this Note do not reflect all of our contingencies. The ultimate outcome of the above-described matters may differ materially from the outcomes anticipated, estimated, projected or implied by us in certain of our statements appearing above in this Note, and proceedings currently viewed as immaterial by us may ultimately materially impact us.

Right-of-Way

At December 31, 2020, our future rental commitments for Right-of-Way agreements were as follows:

	Right-of-Way Agreements	
	(Dollars in millions)	
2021	\$	221
2022		135
2023		91
2024		78
2025		67
2026 and thereafter		673
Total future minimum payments	\$	1,265

Purchase Commitments

We have several commitments primarily for marketing activities and support services from a variety of vendors to be used in the ordinary course of business totaling \$1.0 billion at December 31, 2020. Of this amount, we expect to purchase \$403 million in 2021, \$328 million in 2022 through 2023, and \$98 million in 2024 and 2025 and \$171 million in 2026 and thereafter. These amounts do not represent our entire anticipated purchases in the future, but represent only those items for which we were contractually committed as of December 31, 2020.

(18) Other Financial Information

Other Current Assets

The following table presents details of other current assets in our consolidated balance sheets:

	As of December 31,	
	2020	2019
	(Dollars in millions)	
Prepaid expenses	\$ 290	274
Income tax receivable	7	35
Materials, supplies and inventory	105	105
Contract assets	66	42
Contract acquisition costs	173	178
Contract fulfillment costs	114	115
Other	53	70
Total other current assets	\$ 808	819

Included in accounts payable at December 31, 2020 and 2019 were \$329 million and \$469 million, respectively, associated with capital expenditures. Also included in accounts payable at December 31, 2019 was \$106 million representing book overdrafts. There were no book overdrafts at December 31, 2020.

(19) Labor Union Contracts

As of December 31, 2020, approximately 23% of our employees were represented by the Communication Workers of America ("CWA") or the International Brotherhood of Electrical Workers ("IBEW"). We believe that relations with our employees continue to be generally good. Approximately 1% of our union-represented employees were subject to collective bargaining agreements that expired as of December 31, 2020 and are currently being renegotiated. Approximately 14% of our represented employees are subject to collective bargaining agreements that are scheduled to expire over the 12 month period ending December 31, 2021.

(20) Accumulated Other Comprehensive Loss

Information Relating to 2020

The table below summarizes changes in accumulated other comprehensive loss recorded on our consolidated balance sheet by component for the year ended December 31, 2020:

	Pension Plans	Post-Retirement Benefit Plans	Foreign Currency Translation Adjustment and Other	Interest Rate Swap	Total
	(Dollars in millions)				
Balance at December 31, 2019	\$ (2,229)	(184)	(228)	(39)	(2,680)
Other comprehensive loss before reclassifications	(115)	(103)	(37)	(86)	(341)
Amounts reclassified from accumulated other comprehensive loss	147	15	—	46	208
Net current-period other comprehensive income (loss)	32	(88)	(37)	(40)	(133)
Balance at December 31, 2020	\$ (2,197)	(272)	(265)	(79)	(2,813)

The table below presents further information about our reclassifications out of accumulated other comprehensive loss by component for the year ended December 31, 2020:

Year Ended December 31, 2020	(Decrease) Increase in Net Loss	Affected Line Item in Consolidated Statement of Operations
	(Dollars in millions)	
Interest rate swaps	\$ 62	Interest expense
Income tax expense	(16)	Income tax expense
Net of tax	<u>\$ 46</u>	
Amortization of pension & post-retirement plans ⁽¹⁾		
Net actuarial loss	\$ 203	Other (expense) income, net
Prior service cost	7	Other (expense) income, net
Curtailment loss	4	Other (expense) income, net
Total before tax	214	
Income tax benefit	(52)	Income tax expense
Net of tax	<u>\$ 162</u>	

(1) See Note 10—Employee Benefits for additional information on our net periodic benefit (expense) income related to our pension and post-retirement plans.

Information Relating to 2019

The table below summarizes changes in accumulated other comprehensive loss recorded on our consolidated balance sheet by component for the year ended December 31, 2019:

	Pension Plans	Post-Retirement Benefit Plans	Foreign Currency Translation Adjustment and Other	Interest Rate Swap	Total
	(Dollars in millions)				
Balance at December 31, 2018	\$ (2,173)	(58)	(230)	—	(2,461)
Other comprehensive (loss) income before reclassifications	(219)	(138)	2	(41)	(396)
Amounts reclassified from accumulated other comprehensive loss	163	12	—	2	177
Net current-period other comprehensive (loss) income	(56)	(126)	2	(39)	(219)
Balance at December 31, 2019	<u>\$ (2,229)</u>	<u>(184)</u>	<u>(228)</u>	<u>(39)</u>	<u>(2,680)</u>

The table below presents further information about our reclassifications out of accumulated other comprehensive loss by component for the year ended December 31, 2019:

Year Ended December 31, 2019	(Decrease) Increase in Net Loss	Affected Line Item in Consolidated Statement of Operations
	(Dollars in millions)	
Amortization of pension & post-retirement plans ⁽¹⁾		
Interest rate swap	\$ 2	Interest expense
Net actuarial loss	224	Other (expense) income, net
Prior service cost	8	Other (expense) income, net
Total before tax	234	
Income tax benefit	(57)	Income tax expense
Net of tax	\$ 177	

(1) See Note 10—Employee Benefits for additional information on our net periodic benefit (expense) income related to our pension and post-retirement plans.

(21) Dividends

Our Board of Directors declared the following dividends payable in 2020 and 2019:

Date Declared	Record Date	Dividend Per Share	Total Amount (in millions)	Payment Date
November 19, 2020	11/30/2020	\$ 0.250	\$ 274	12/11/2020
August 20, 2020	8/31/2020	0.250	274	9/11/2020
May 20, 2020	6/1/2020	0.250	274	6/12/2020
February 27, 2020	3/9/2020	0.250	274	3/20/2020
November 21, 2019	12/2/2019	0.250	273	12/13/2019
August 22, 2019	9/2/2019	0.250	273	9/13/2019
May 23, 2019	6/3/2019	0.250	274	6/14/2019
March 1, 2019	3/12/2019	0.250	273	3/22/2019

The declaration of dividends is solely at the discretion of our Board of Directors, which may change or terminate our dividend practice at any time for any reason without prior notice. On February 25, 2021, our Board of Directors declared a quarterly cash dividend of \$0.25 per share.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934 (the “Exchange Act”)) designed to provide reasonable assurance that the information required to be disclosed by us in the reports we file under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms. These include controls and procedures designed to ensure that this information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure. Management, with the participation of our Chief Executive Officer, Jeff K. Storey, and our Executive Vice President and Chief Financial Officer, Indraneel Dev, evaluated the effectiveness of our disclosure

controls and procedures as of December 31, 2020. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective, as of December 31, 2020, in providing reasonable assurance that the information required to be disclosed by us in this report was accumulated and communicated in the manner provided above.

Changes in Internal Control Over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) of the Exchange Act) that occurred during the fourth quarter of 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations of Internal Controls

The effectiveness of our or any system of disclosure controls and procedures is subject to certain limitations, including the exercise of judgment in designing, implementing and evaluating the controls and procedures, the assumptions used in identifying the likelihood of future events and the inability to eliminate misconduct completely. As a result, there can be no assurance that our disclosure controls and procedures will detect all errors or fraud. By their nature, our or any system of disclosure controls and procedures can provide only reasonable assurance regarding management's control objectives.

Internal Control Over Financial Reporting

Management's Report on Internal Control over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) of the Exchange Act), 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 in the United States. Under the supervision and with the participation of management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based on our evaluation under the framework of COSO, management concluded that our internal control over financial reporting was effective at December 31, 2020. The effectiveness of our internal control over financial reporting at December 31, 2020 has been audited by KPMG LLP, as stated in their report. See the Report of Independent Registered Public Accounting Firm on our internal control over financial reporting in Item 8, which is incorporated herein by reference.

Management's Report on the Consolidated Financial Statements

Management has prepared and is responsible for the integrity and objectivity of our consolidated financial statements for the year ended December 31, 2020. The consolidated financial statements included in this report have been prepared in accordance with accounting principles generally accepted in the United States and necessarily include amounts determined using our best judgments and estimates.

Our consolidated financial statements have been audited by KPMG LLP, an independent registered public accounting firm, who have expressed an unqualified opinion on the consolidated financial statements. Their audit was conducted in accordance with standards of the Public Company Accounting Oversight Board (United States).

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 10 is incorporated by reference to the Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is incorporated by reference to the Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**Equity Compensation Plan Information**

The following table provides information as of December 31, 2020 about our equity compensation plans under which Common Shares are authorized for issuance:

	Number of securities to be issued upon exercise of outstanding options and rights (a)	Weighted-average exercise price of outstanding options and rights (b)	Number of securities remaining available for future issuance under plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by shareholders	11,871,985 ⁽¹⁾	\$ — ⁽²⁾	48,590,556
Equity compensation plans not approved by shareholders ⁽³⁾	470,946	41.40 ⁽²⁾	—
Totals	12,342,931 ⁽¹⁾	\$ 41.40 ⁽²⁾	48,590,556

(1) These amounts include restricted stock units, some of which represent the difference between the number of shares of restricted stock subject to market conditions granted at target and the maximum possible payout for these awards. Depending on performance, the actual share payout of these awards may range between 0-200% of target.

(2) The amounts in column (a) include restricted stock units, which do not have an exercise price. Consequently, those awards were excluded from the calculation of this exercise price.

(3) These amounts represent common shares to be issued upon exercise of options that were assumed in connection with certain acquisitions. This also includes restricted stock units outstanding under Legacy Level 3 Plan. In connection with our merger with Level 3, we also assumed certain awards then-outstanding under other predecessor plans of Level 3.

The balance of the information required by Item 12 is incorporated by reference to the Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by Item 13 is incorporated by reference to the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is incorporated by reference to the Proxy Statement.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Exhibits identified in parentheses below are on file with the SEC and are incorporated herein by reference. All other exhibits are provided as part of this electronic submission.

Exhibit Number	Description
3.1*	<u>Composite Articles of Incorporation of Lumen Technologies, Inc., as amended through January 22, 2021.</u>
3.2	<u>Bylaws of Lumen Technologies, Inc., as amended and restated through January 22, 2021 (incorporated by reference to Exhibit 3.2 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 26, 2021).</u>
4.1*	<u>Description of Lumen Technologies, Inc.'s securities registered under Section 12 of the Securities Exchange Act of 1934, as amended.</u>
4.2	<u>Form of common stock certificate (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 26, 2021).</u>
4.3	<u>Amended and Restated Section 382 Rights Agreement by and between CenturyLink, Inc. and Computershare Trust Company, N.A., dated as of May 9, 2019 (incorporated by reference to Appendix C set forth in CenturyLink's Schedule 14A (File No. 001-07784) filed with the Securities and Exchange Commission on May 10, 2019).</u>
a.	<u>First Amendment to the Section 382 Rights Agreement by and between CenturyLink, Inc. and Computershare Trust Company, N.A., entered into on November 20, 2020, effective as of December 1, 2020 (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 25, 2020).</u>
4.4	Instruments relating to CenturyLink, Inc.'s Senior Secured Credit Facilities.
a.	<u>Restatement Agreement, dated as of January 31, 2020, by and among CenturyLink, Inc., as Borrower, Bank of America, N.A., as Administrative Agent and Collateral Agent, and the other lenders named therein (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 31, 2020).</u>
b.	<u>Amended and Restated Credit Agreement, dated as of January 31, 2020, by and among CenturyLink, Inc., as Borrower, Bank of America, N.A. as Administrative Agent and Collateral Agent, and the other lenders, agents, arrangers and bookrunners named therein (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 31, 2020).</u>
4.5	Instruments relating to CenturyLink, Inc.'s public senior debt. ⁽¹⁾
a.	<u>Indenture, dated as of March 31, 1994, by and between Century Telephone Enterprises, Inc. (currently named CenturyLink, Inc.) and Regions Bank (successor-in-interest to First American Bank & Trust of Louisiana), as Trustee (incorporated by reference to Exhibit 4.4(a) to CenturyLink's Annual Report on Form 10-K (File No. 001-07784) for the year ended December 31, 2014 filed with the Securities and Exchange Commission on February 24, 2015).</u>
(i).	Form of 7.2% Senior Notes, Series D, due 2025 (incorporated by reference to Exhibit 4.27 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1995 (File No. 001-07784) filed with the Securities and Exchange Commission on March 18, 1996).
(ii).	Form of 6.875% Debentures, Series G, due 2028, (incorporated by reference to Exhibit 4.9 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1997 (File No. 001-07784) filed with the Securities and Exchange Commission on March 16, 1998).
(iii).	<u>Fifth Supplemental Indenture, dated as of September 21, 2009, by and between CenturyTel, Inc. (currently named CenturyLink, Inc.) and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 7.60% Senior Notes, Series P, due 2039 (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on September 22, 2009).</u>

Exhibit Number	Description
	<ul style="list-style-type: none"> (iv). <u>Sixth Supplemental Indenture, dated as of June 16, 2011, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 6.45% Senior Notes, Series S, due 2021 (incorporated by reference to Exhibit 4.2 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on June 16, 2011).</u> (v). <u>Seventh Supplemental Indenture, dated as of March 12, 2012, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 5.80% Senior Notes, Series T, due 2022 and 7.65% Senior Notes, Series U, due 2042 (incorporated by reference to Exhibit 4.1 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on March 12, 2012).</u> (vi). <u>Ninth Supplemental Indenture, dated as of November 27, 2013, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 6.75% Senior Notes, Series W, due 2023 (incorporated by reference to Exhibit 4.1 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 27, 2013).</u> (vii). <u>Tenth Supplemental Indenture, dated as of March 19, 2015, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 5.625% Senior Notes, Series X, due 2025 (incorporated by reference to Exhibit 4.2 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on March 19, 2015).</u> (viii). <u>Eleventh Supplemental Indenture, dated as of April 6, 2016, by and between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 7.5% Senior Notes, Series Y, due 2024 (incorporated by reference to Exhibit 4.2 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on April 6, 2016).</u>
	<ul style="list-style-type: none"> b. <u>Indenture, dated December 16, 2019, between CenturyLink, Inc. and Regions Bank, as Trustee (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on December 16, 2019).</u> <ul style="list-style-type: none"> (i). <u>First Supplemental Indenture, dated December 16, 2019, between CenturyLink, Inc. and Regions Bank, as Trustee, designating and outlining the terms and conditions of CenturyLink's 5.125% Senior Notes due 2026 (incorporated by reference to Exhibit 4.2 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on December 16, 2019).</u>
	<ul style="list-style-type: none"> c. <u>Indenture, dated January 24, 2020, between CenturyLink, Inc. and Wells Fargo Bank, National Association, as Trustee and Notes Collateral Agent, designating and outlining the terms and conditions of CenturyLink's 4.000% Senior Secured Notes due 2027 (incorporated by reference to Exhibit 4.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 24, 2020).</u> d. <u>Indenture, dated November 27, 2020, among Lumen Technologies, Inc.'s, as Issuer, and Regions Bank, as Trustee, designating and outlining the terms and conditions of Lumen Technologies, Inc. 4.500% Senior Notes due 2029 (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) dated November 27, 2020).</u>
4.6	Instruments relating to indebtedness of Qwest Communications International, Inc. and its subsidiaries. ⁽¹⁾ <ul style="list-style-type: none"> a. <u>Indenture, dated as of April 15, 1990, by and between The Mountain States Telephone and Telegraph Company (currently named Qwest Corporation) and The First National Bank of Chicago (incorporated by reference to Exhibit 4.2 to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 001-03040) filed with the Securities and Exchange Commission on January 13, 2004).</u> <ul style="list-style-type: none"> (i). <u>First Supplemental Indenture, dated as of April 16, 1991, by and between U S WEST Communications, Inc. (currently named Qwest Corporation) and The First National Bank of Chicago (incorporated by reference to Exhibit 4.3 to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 001-03040) filed with the Securities and Exchange Commission on January 13, 2004).</u> b. <u>Indenture, dated as of April 15, 1990, by and between Northwestern Bell Telephone Company (predecessor to Qwest Corporation) and The First National Bank of Chicago (incorporated by reference to Exhibit 4.5(b) to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2012 (File No. 001-07784) filed with the Securities and Exchange Commission on May 10, 2012).</u>

Exhibit Number	Description
	<ul style="list-style-type: none"> (i). <u>First Supplemental Indenture, dated as of April 16, 1991, by and between U S WEST Communications, Inc. (currently named Qwest Corporation) and The First National Bank of Chicago (incorporated by reference to Exhibit 4.3 to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 2002 (File No. 001-03040) filed with the Securities and Exchange Commission on January 13, 2004).</u>
c.	<p>Indenture, dated as of June 29, 1998, by and among U S WEST Capital Funding, Inc. (currently named Qwest Capital Funding, Inc.), U S WEST, Inc. (predecessor to Qwest Communications International Inc.) and The First National Bank of Chicago, as trustee (incorporated by reference to Exhibit 4(a) to U S WEST, Inc.'s Current Report on Form 8-K (File No. 001-14087) filed with the Securities and Exchange Commission on November 18, 1998).</p> <ul style="list-style-type: none"> (i). <u>First Supplemental Indenture, dated as of June 30, 2000, by and among U S WEST Capital Funding, Inc. (currently named Qwest Capital Funding, Inc.), U S WEST, Inc. (predecessor to Qwest Communications International Inc.) and Bank One Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.10 to Qwest Communications International Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2000 (File No. 001-15577) filed with the Securities and Exchange Commission on August 11, 2000).</u>
d.	<p><u>Indenture, dated as of October 15, 1999, by and between US West Communications, Inc. (currently named Qwest Corporation) and Bank One Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4(b) to Qwest Corporation's Annual Report on Form 10-K for the year ended December 31, 1999 (File No. 001-03040) filed with the Securities and Exchange Commission on March 3, 2000).</u></p> <ul style="list-style-type: none"> (i). <u>Ninth Supplemental Indenture, dated as of October 4, 2011, by and between Qwest Corporation and U.S. Bank National Association, designating and outlining the terms and conditions of Qwest Corporation's 6.75% Notes due 2021 (incorporated by reference to Exhibit 4.1 to Qwest Corporation's Current Report on Form 8-K (File No. 001-03040) filed with the Securities and Exchange Commission on October 4, 2011).</u> (ii). <u>Sixteenth Supplemental Indenture, dated as of August 22, 2016, by and between Qwest Corporation and U.S. Bank National Association, designating and outlining the terms and conditions of Qwest 6.500% Notes due 2056 (incorporated by reference to Exhibit 4.17 to Qwest Corporation's Form 8-A (File No. 001-03040) filed with Securities and Exchange Commission on August 22, 2016).</u> (iii). <u>Seventeenth Supplemental Indenture dated as of April 27, 2017, by and between Qwest Corporation and U.S. Bank National Association, designating and outlining the terms and conditions of Qwest Corporation's 6.750% Notes due 2057 (incorporated by reference to Exhibit 4.18 to Qwest Corporation's Form 8-A (File No. 03040) filed with the Securities and Exchange Commission on April 27, 2017).</u>
e.*	<u>Amended and Restated Credit Agreement, dated as of October 23, 2020, by and among Qwest Corporation, the several lenders from time to time parties thereto, and CoBank, ACB, as administrative agent.</u>
4.7	Instruments relating to indebtedness of Embarq Corporation. ⁽¹⁾
a.	<u>Indenture, dated as of May 17, 2006, by and between Embarq Corporation and J.P. Morgan Trust Company, National Association, a national banking association, as trustee (incorporated by reference to Exhibit 4.1 to Embarq Corporation's Current Report on Form 8-K (File No. 001-32732) filed with the Securities and Exchange Commission on May 18, 2006).</u>
b.	<u>7.995% Global Note due 2036 of Embarq Corporation (incorporated by reference to Exhibit 4.4 to Embarq Corporation's Annual Report on Form 10-K for the year ended December 31, 2006 (File No. 001-32372) filed with the Securities and Exchange Commission on March 9, 2007).</u>
4.8	Instruments relating to indebtedness of Level 3 Communications, Inc. and its subsidiaries. ⁽¹⁾
a.	<u>Indenture, dated as of April 28, 2015, by and between Level 3 Communications, Inc., as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.375% Senior Notes due 2025 (incorporated by reference to Exhibit 4.2 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on April 30, 2015).</u>

Exhibit Number	Description
	<p>(i). <u>Supplemental Indenture, dated as of September 1, 2015, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 5.375% Senior Notes due 2025 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.2 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on September 2, 2015).</u></p> <p>(ii). <u>Supplemental Indenture, dated as of September 1, 2015, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 5.375% Senior Notes due 2025 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.4 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on September 2, 2015).</u></p> <p>(iii). <u>Supplemental Indenture, dated as of November 22, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, amending the Indenture dated as of April 28, 2015, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.375% Senior Notes due 2025 (incorporated by reference to Exhibit 4.4 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on November 28, 2016).</u></p> <p>(iv). <u>Supplemental Indenture, dated as of November 1, 2017, among Level 3 Communications, Inc. as guarantor, Level 3 Financing, Inc., as issuer, Level 3 Parent, LLC (f/k/a WWG Merger Sub LLC) and The Bank of New York Mellon Trust Company, N.A., as trustee, amending the Indenture dated as of April 28, 2015, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.125% Senior Notes due 2023 (incorporated by reference to Exhibit 4.3 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on November 1, 2017).</u></p> <p>b. <u>Indenture, dated as of November 13, 2015, by and between Level 3 Communications, Inc., as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.375% Senior Notes due 2024 (incorporated by reference to Exhibit 4.1 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on November 13, 2015).</u></p> <p>(i). <u>Supplemental Indenture, dated as of February 8, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 5.375% Senior Notes due 2024 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on February 8, 2016).</u></p> <p>(ii). <u>Supplemental Indenture, dated as of February 8, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 5.375% Senior Notes due 2024 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.2 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on February 8, 2016).</u></p> <p>(iii). <u>Supplemental Indenture, dated as of November 22, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, amending the Indenture dated as of November 13, 2015, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.375% Senior Notes due 2024 (incorporated by reference to Exhibit 4.2 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on November 28, 2016).</u></p>

Exhibit Number	Description
	(iv). <u>Supplemental Indenture, dated as of November 1, 2017, among Level 3 Communications, Inc. as guarantor, Level 3 Financing, Inc., as issuer, Level 3 Parent, LLC (f/k/a WWG Merger Sub LLC) and The Bank of New York Mellon Trust Company, N.A., as trustee, amending the Indenture dated as of November 13, 2015, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.375% Senior Notes due 2024 (incorporated by reference to Exhibit 4.2 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on November 1, 2017).</u>
c.	<u>Indenture, dated as of March 22, 2016, by and between Level 3 Communications, Inc., as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.25% Senior Notes due 2026 (incorporated by reference to Exhibit 4.1 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on March 22, 2016).</u>
	(i). <u>Supplemental Indenture, dated as of September 16, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 5.25% Senior Notes due 2026 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on September 16, 2016).</u>
	(ii). <u>Supplemental Indenture, dated as of September 16, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 5.25% Senior Notes due 2026 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.2 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on September 16, 2016).</u>
	(iii). <u>Supplemental Indenture, dated as of November 22, 2016, by and between Level 3 Communications, Inc., as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, amending the Indenture dated as of March 22, 2016, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.25% Senior Notes due 2026 (incorporated by reference to Exhibit 4.1 to Level 3 Communications, Inc.'s Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on November 28, 2016).</u>
	(iv). <u>Supplemental Indenture, dated as of November 1, 2017, among Level 3 Communications, Inc. as guarantor, Level 3 Financing, Inc., as issuer, Level 3 Parent, LLC (f/k/a WWG Merger Sub LLC) and The Bank of New York Mellon Trust Company, N.A., as trustee, amending the Indenture dated as of March 22, 2016, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 5.25% Senior Notes due 2026 (incorporated by reference to Exhibit 4.1 to Level 3 Communications, Inc.'s Current Report on Form 8-K (file no. 001-35134) filed with the Securities and Exchange Commission on November 1, 2017).</u>
d.	<u>Indenture, dated as of September 25, 2019, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and the Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 4.625% Senior Notes due 2027 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 99.1 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on September 26, 2019).</u>
	(i).* <u>First Supplemental Indenture, dated as of March 2, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 4.625% Senior Notes due 2027 of Level 3 Financing, Inc.</u>
	(ii).* <u>Second Supplemental Indenture, dated as of March 2, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 4.625% Senior Notes due 2027 of Level 3 Financing, Inc.</u>

Exhibit Number	Description
e.	<u>Indenture, dated as of November 29, 2019, among Level 3 Parent, LLC and the other guarantors party thereto, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee and Notes Collateral Agent, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 3.400% Senior Secured Notes due 2027 (incorporated by reference to Exhibit 10.2 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on December 4, 2019).</u>
(i).*	<u>Supplemental Indenture, dated as of April 15, 2020, among Level 3 Financing, Inc., as issuer, The Bank of New York Mellon Trust Company, N.A., as trustee, and Level 3 Parent, LLC and several of its subsidiaries, as guarantors, designating and outlining the terms and conditions of the secured guarantees of the 3.400% Senior Secured Notes due 2027 of Level 3 Financing, Inc.</u>
f.	<u>Indenture, dated as of November 29, 2019, among Level 3 Parent, LLC and the other guarantors party thereto, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee and Notes Collateral Agent, designating and outlining the terms and conditions of Level 3 Financing, Inc.'s 3.875% Senior Secured Notes due 2029 (incorporated by reference to Exhibit 10.3 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on December 4, 2019).</u>
(i).*	<u>Supplemental Indenture, dated as of April 15, 2020, among Level 3 Financing, Inc., as issuer, The Bank of New York Mellon Trust Company, N.A., as trustee, and Level 3 Parent, LLC and several of its subsidiaries, as guarantors, designating and outlining the terms and conditions of the secured guarantees of the 3.875% Senior Secured Notes due 2029 of Level 3 Financing, Inc.</u>
g.	<u>Indenture, dated as of June 15, 2020, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 4.250% Senior Notes due 2028 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on June 15, 2020).</u>
(i).*	<u>First Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 4.250% Senior Notes due 2028 of Level 3 Financing, Inc.</u>
(ii).*	<u>Second Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 4.250% Senior Notes due 2028 of Level 3 Financing, Inc.</u>
h.	<u>Indenture, dated August 12, 2020, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 3.625% Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on August 12, 2020).</u>
(i).*	<u>First Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, designating and outlining the terms and conditions of Level 3 Communications, LLC's unsecured guarantee of the 3.625% Senior Notes due 2029 of Level 3 Financing, Inc.</u>
(ii).*	<u>Second Supplemental Indenture, dated as of December 21, 2020, among Level 3 Parent LLC, as guarantor, Level 3 Communications, LLC, as guarantor, Level 3 Financing, Inc., as issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee, relating to the subordination in any bankruptcy, liquidation or winding up proceeding of the guarantee by Level 3 Communications, LLC of the 3.625% Senior Notes due 2029 of Level 3 Financing, Inc.</u>

Exhibit Number	Description
	<ul style="list-style-type: none"> i. Indenture, dated January 13, 2021, among Level 3 Parent, LLC, as Guarantor, Level 3 Financing, Inc., as Issuer, and The Bank of New York Mellon Trust Company, N.A., as Trustee, relating to the 3.750% Sustainability-Linked Senior Notes due 2029 of Level 3 Financing, Inc. (incorporated by reference to Exhibit 4.1 to Lumen Technologies, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on January 13, 2021). j. Thirteenth Amendment Agreement to the Amended and Restated Credit Agreement, dated as of November 29, 2019, by and between Level 3 Parent, LLC, Level 3 Financing, Inc., the Lenders party thereto and Merrill Lynch Capital Corporation (incorporated by reference to Exhibit 10.1 to Level 3 Parent, LLC's Current Report on Form 8-K (File No. 001-35134) filed with the Securities and Exchange Commission on December 4, 2019).
10.1+	<p>CenturyLink 2011 Equity Incentive Plan, as amended through May 18, 2016 (incorporated by reference to Appendix A of CenturyLink, Inc.'s Proxy Statement dated April 1, 2016 as filed with the Securities and Exchange Commission on Schedule 14A (File No. 001-07784).</p> <ul style="list-style-type: none"> (i). Form of Restricted Stock Agreement for executive officers used for annual recurring grants from 2013 to 2017 (incorporated by reference to Exhibit 10.2(i) (iii) to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2013 (File No. 001-07784) filed with the Securities and Exchange Commission on August 8, 2013). (ii). Form of Restricted Stock Agreement for annual time-based equity grants to certain executive officers in 2018 (not including Jeffrey K. Storey) (incorporated by reference to Exhibit 10.1(v) to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the SEC on March 11, 2019). (iii). Form of Restricted Stock Agreement for annual performance-based equity grants to certain executive officers in 2018 (not including Jeffrey K. Storey) (incorporated by reference to Exhibit 10.1(vi) to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the SEC on March 11, 2019).
10.2+	<p>Amended and Restated Lumen Technologies, Inc. 2018 Equity Incentive Plan (incorporated by reference to Exhibit 10.1 to Lumen Technologies, Inc.'s Quarterly Report on Form 10-Q (File No. 001-07784) filed with the Securities and Exchange Commission on November 5, 2020).</p> <ul style="list-style-type: none"> (i). Form of Restricted Stock Agreement for annual equity grants to non-management directors in 2018 (incorporated by reference to Exhibit 10.1A to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2018 (File No. 001-07784) filed with the SEC on August 9, 2018). (ii). Form of RSU Agreement for annual time-based equity grant to Jeffrey K. Storey on May 23, 2018 (incorporated by reference to Exhibit 10.1B to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2018 (File No. 001-07784) filed with the SEC on August 9, 2018). (iii). Form of RSU Agreement for annual performance-based equity grant to Jeffrey K. Storey on May 23, 2018 (incorporated by reference to Exhibit 10.1C to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2018 (File No. 001-07784) filed with the SEC on August 9, 2018). (iv). Restricted Stock Agreement for time-based portion of 2018 promotion equity grant to Jeffrey K. Storey on May 23, 2018 (incorporated by reference to Exhibit 10.1D to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2018 (File No. 001-07784) filed with the SEC on August 9, 2018). (v). Restricted Stock Agreement for performance-based portion of 2018 promotion equity grant to Jeffrey K. Storey on May 23, 2018 (incorporated by reference to Exhibit 10.1E to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2018 (File No. 001-07784) filed with the SEC on August 9, 2018).
10.3+	Supplemental Dollars & Sense Plan, 2014 Restatement, effective January 1, 2014 (incorporated by reference to Exhibit 10.3 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the Securities and Exchange Commission on March 11, 2019).
10.4+	Supplemental Defined Benefit Pension Plan, effective as of January 1, 2012 (incorporated by reference to Exhibit 10.5 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2011 (File No. 001-07784) filed with the Securities and Exchange Commission on February 28, 2012).
10.5+	2015 Executive Officer Short-Term Incentive Program (incorporated by reference to Appendix A to CenturyLink's Proxy Statement dated April 3, 2015, as filed with the Securities and Exchange Commission on Form 14A (File No. 001-07784)).

Exhibit Number	Description
10.6+	<u>Key Employee Incentive Compensation Plan, dated as of January 1, 1984, as amended and restated as of November 16, 1995 (incorporated by reference to Exhibit 10.1(f) to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1995 (File No. 001-07784) filed with the Securities and Exchange Commission on March 18, 1996) and amendment thereto dated as of November 21, 1996 (incorporated by reference to Exhibit 10.1(f) to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 1996 (File No. 001-07784) filed with the Securities and Exchange Commission on March 17, 1997), amendment thereto dated as of February 25, 1997 (incorporated by reference to Exhibit 10.2 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 1997 (File No. 001-07784) filed with the Securities and Exchange Commission on May 8, 1997), amendment thereto dated as of April 25, 2001 (incorporated by reference to Exhibit 10.2 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2001 (File No. 001-07784) filed with the Securities and Exchange Commission on May 15, 2001), amendment thereto dated as of April 17, 2000 (incorporated by reference to Exhibit 10.3(a) to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2001 (File No. 001-07784) filed with the Securities and Exchange Commission on March 15, 2002) and amendment thereto dated as of February 27, 2007 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2007 (File No. 001-07784) filed with the Securities and Exchange Commission on August 8, 2007).</u>
10.7+	<u>Form of Indemnification Agreement entered into between CenturyLink, Inc. and each of its directors as of February 24, 2016 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 29, 2016).</u>
10.8+	<u>Form of Indemnification Agreement entered into between CenturyLink, Inc. and each of its officers as of February 24, 2016 (incorporated by reference to Exhibit 10.2 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on February 29, 2016).</u>
10.9+	<u>Change of Control Agreement, by and between Jeffrey K. Storey and CenturyLink, Inc. (incorporated by reference to Exhibit 10.9 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the SEC on March 11, 2019).</u>
10.10+	<u>Form of Change of Control Agreement, effective January 1, 2011 between CenturyLink, Inc. and each of its other executive officers (incorporated by reference to Exhibit 10.12 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2010 (File No. 001-07784) filed with the Securities and Exchange Commission on March 1, 2011).</u>
10.11+	<u>Amended and Restated CenturyLink Executive Severance Plan, effective October 10, 2017 (including, as Exhibit E thereto, the Legacy Level 3 Key Executive Severance Plan, as assumed by CenturyLink, Inc. effective November 1, 2017 (covering certain Legacy Level 3 employees through October 31, 2019))(incorporated by reference to Exhibit 10.12 to CenturyLink, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2018 (File No. 001-07784) filed with the SEC on March 11, 2019).</u>
10.12+	<u>Amended and Restated CenturyLink, Inc. Bonus Life Insurance Plan for Executive Officers, dated as of April 3, 2008 (incorporated by reference to Exhibit 10.4 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2008 (File No. 001-07784) filed with the Securities and Exchange Commission on May 7, 2008) and First Amendment thereto (incorporated by reference to Exhibit 10.13 to CenturyLink, Inc.'s Quarterly Report on Form 10-Q for the period ended September 30, 2010 (File No. 001-07784) filed with the Securities and Exchange Commission on November 5, 2010).</u>
10.13+	<u>Offer letter between CenturyLink, Inc. and Jeffrey K. Storey, effective May 23, 2018 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784), filed with the SEC on May 25, 2018, which amended, restated and superseded the offer letter between CenturyLink, Inc. and Jeffrey K. Storey, effective April 27, 2017 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 1, 2017).</u>
10.14+	<u>Offer letter between CenturyLink, Inc. and Indraneel Dev, effective November 6, 2018 (incorporated by reference to Exhibit 10.1 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the SEC on November 7, 2018).</u>
10.15+	<u>Legacy Qwest Deferred Compensation Plan for Nonemployee Directors, as amended and restated, Amendment to Deferred Compensation Plan for Nonemployee Directors (incorporated by reference to Exhibit 10.2 to Qwest Communications International Inc.'s Current Report on Form 8-K (File No. 001-15577) filed with the Securities and Exchange Commission on December 16, 2005 and Exhibit 10.8 to Qwest Communication International Inc.'s Quarterly Report on Form 10-Q for the period ended September 30, 2008 (File No. 001-15577) filed with the Securities and Exchange Commission on October 29, 2008) and Amendment No. 2011-1 to Deferred Compensation Plan for Nonemployee Directors (incorporated by reference to Exhibit 10.15(c) to CenturyLink, Inc.'s Annual Report for the year ended December 31, 2011 (File No. 001-07784) filed with the Securities and Exchange Commission on February 28, 2012).</u>

Exhibit Number	Description
10.16+	<u>Level 3 Communications, Inc. Stock Incentive Plan, as amended and restated through October 31, 2017 (incorporated by reference to Exhibit 10.3 to CenturyLink, Inc.'s Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 1, 2017).</u>
10.17	<u>Shareholder Rights Agreement, dated as of October 31, 2016, by and between CenturyLink, Inc. and STT Crossing Ltd. (incorporated by reference to Exhibit 10.2 to CenturyLink's Current Report on Form 8-K (File No. 001-07784) filed with the Securities and Exchange Commission on November 3, 2016); as amended by the Assignment and Assumption Agreement, dated as of February 5, 2018, by and among STT Crossing Ltd., Everitt Investments Pte.Ltd., Aranda Investments Pte.Ltd., and CenturyLink, Inc. (incorporated by reference to Exhibit 99.3 to Amendment No. 1 to a statement of beneficial ownership of common shares of CenturyLink, Inc. on Schedule 13D filed with the SEC by Singapore Technologies Telemedia Pte. Ltd. on February 7, 2018).</u>
21*	<u>Subsidiaries of Lumen Technologies, Inc.</u>
23*	<u>Independent Registered Public Accounting Firm Consent.</u>
31.1*	<u>Certification of the Chief Executive Officer of Lumen Technologies, Inc. furnished pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>
31.2*	<u>Certification of the Chief Financial Officer of Lumen Technologies, Inc. furnished pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.</u>
32.1*	<u>Certification of the Chief Executive Officer of Lumen Technologies, Inc. pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
32.2*	<u>Certification of the Chief Financial Officer of Lumen Technologies, Inc. pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.</u>
101*	Financial statements from the annual report on Form 10-K of Lumen Technologies, Inc. for the period ended December 31, 2020, formatted in Inline XBRL: (i) the Consolidated Statements of Operations, (ii) the Consolidated Statements of Comprehensive Loss, (iii) the Consolidated Balance Sheets, (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statements of Stockholders' Equity and (vi) the Notes to Consolidated Financial Statements.
104*	Cover page formatted as Inline XBRL and contained in Exhibit 101.

* Exhibit filed herewith.

+ Indicates a management contract or compensatory plan or arrangement.

⁽¹⁾ Certain of the items in Sections 4.5, 4.6, 4.7 and 4.8 (i) omit supplemental indentures or other instruments governing debt that has been retired, or (ii) refer to trustees who may have been replaced, acquired or affected by similar changes. In accordance with applicable rules of the SEC, copies of certain instruments defining the rights of holders of certain of our long-term debt are not filed herewith.

ITEM 16. SUMMARY OF BUSINESS AND FINANCIAL INFORMATION

Not applicable.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this annual report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: February 25, 2021

By: **Lumen Technologies, Inc.**

/s/ Eric J. Mortensen
Eric J. Mortensen
Senior Vice President - Controller (Principal Accounting Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this annual report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
_____ /s/ Jeff K. Storey Jeff K. Storey	Chief Executive Officer and Director	February 25, 2021
_____ /s/ T. Michael Glenn T. Michael Glenn	Chairman of the Board	February 25, 2021
_____ /s/ W. Bruce Hanks W. Bruce Hanks	Vice Chairman of the Board	February 25, 2021
_____ /s/ Indraneel Dev Indraneel Dev	Executive Vice President and Chief Financial Officer	February 25, 2021
_____ /s/ Eric J. Mortensen Eric J. Mortensen	Senior Vice President - Controller (Principal Accounting Officer)	February 25, 2021
_____ /s/ Martha Helena Bejar Martha Helena Bejar	Director	February 25, 2021
_____ /s/ Virginia Boulet Virginia Boulet	Director	February 25, 2021
_____ /s/ Peter C. Brown Peter C. Brown	Director	February 25, 2021
_____ /s/ Kevin P. Chilton Kevin P. Chilton	Director	February 25, 2021
_____ /s/ Steven T. "Terry" Clontz Steven T. "Terry" Clontz	Director	February 25, 2021
_____ /s/ Hal Stanley Jones Hal Stanley Jones	Director	February 25, 2021

<u>/s/ Michael Roberts</u>	Director	February 25, 2021
Michael Roberts		
<u>/s/ Laurie Siegel</u>	Director	February 25, 2021
Laurie Siegel		

**COMPOSITE
ARTICLES OF INCORPORATION
of
LUMEN TECHNOLOGIES, INC.
(a Louisiana corporation)**

(as amended and restated through January 22, 2021)¹

**ARTICLE I
Name**

The name of this Corporation is Lumen Technologies, Inc.

**ARTICLE II
Purpose**

The purpose of the Corporation is to engage in any lawful activity for which corporations may be formed under the Business Corporation Law of Louisiana.

**ARTICLE III
Capital**

A. Authorized Stock. The Corporation shall be authorized to issue an aggregate of 2,202,000,000 shares of capital stock, of which 2,200,000,000 shares shall be Common Stock, \$1.00 par value per share, and 2,000,000 shares shall be Preferred Stock, \$25.00 par value per share.

B. Preferred Stock. (1) The Preferred Stock may be issued from time to time in one or more series.

(2) In respect to any series of Preferred Stock, the Board of Directors is hereby authorized to fix or alter the dividend rights, dividend rates, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), the redemption price or prices, and the liquidation preferences of any wholly unissued series of Preferred Stock, and the number of shares constituting any such series and the designation thereof, or any of them; and to increase or decrease the number of shares of any series subsequent to the issue of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be so decreased, the shares constituting such decrease shall resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series. In addition thereto the Board of Directors shall have such other powers with respect to the Preferred Stock and any series thereof as shall be permitted by applicable law.

(3) No full dividend for any quarterly dividend period may be declared or paid on shares of any series of Preferred Stock unless the full dividend for that period shall be concurrently declared or paid on all series of Preferred Stock outstanding in accordance with the terms of each series. If there are any accumulated dividends accrued or in arrears on any share of any series of Preferred Stock those dividends shall be paid in full before any full dividend shall be paid on any other series of Preferred Stock. If less than a full dividend is to be paid, the amount of the dividend to be distributed shall be divided among the shares of Preferred Stock for which dividends are accrued or in arrears in proportion to the aggregate amounts which would be distributable to those holders of Preferred Stock if full cumulative dividends had previously been paid thereon in accordance with the terms of each series.

C. Voting Rights of Common Stock. Each outstanding share of Common Stock entitles the holder thereof to one vote with respect to each matter properly submitted to the shareholders of the Corporation for their vote, consent, waiver, release or other action.

D. Non-Assessability; Transfers; Pre-emptive Rights. The stock of this Corporation shall be fully paid and non-assessable when issued and shall be personal property. No transfer of such stock shall be binding upon this Corporation unless such transfer is made in accordance with these Articles and the by-laws of this Corporation and duly recorded in the books

¹ Reflects all amendments to the Corporation's amended and restated Articles of Incorporation through this date.

thereof. No stockholder shall have any pre-emptive right to subscribe to any or all additions to the stock of this Corporation.

E. Series L Preferred Stock. The Corporation's 5% Cumulative Convertible Series L Preferred Stock ("Series L Shares") shall consist of 325,000 shares of Preferred Stock having the preferences, limitations and relative rights set forth below.

(1) Voting Rights. Holders of the Series L Shares shall be entitled to cast one vote per share, voting with holders of shares of Common Stock and with holders of other series of voting preferred stock as a single class, on any matter to come before a meeting of the shareholders, except with respect to the casting of ballots on those matters as to which holders of Preferred Stock or a particular series thereof are required by law to vote separately.

(2) Rank. The Series L Shares shall, with respect to dividend rights and rights upon liquidation, dissolution and winding up, rank prior to the Common Stock. All equity securities of the Corporation to which the Series L Shares rank prior, whether with respect to dividends or upon liquidation, dissolution or winding-up or otherwise, including the Common Stock, are collectively referred to herein as the "Junior Securities;" all equity securities of the Corporation with which the Series L Shares rank *pari passu* are collectively referred to herein as the "Parity Securities"; and all other equity securities of the Corporation (other than any convertible debt securities) to which the Series L Shares rank junior are collectively referred to herein as the "Senior Securities." The preferences, limitations and relative rights of the Series L Shares shall be subject to the preferences, limitations and relative rights of the Junior Securities, Parity Securities and Senior Securities issued after the Series L Shares are issued.

(3) Dividends.

(a) The holders of record of the Series L Shares shall be entitled to receive, when, as and if declared by the Board of Directors out of funds of the Corporation legally available therefor, an annual cash dividend of \$1.25 on each Series L Share, payable quarterly on each March 31, June 30, September 30 and December 31 on which any Series L Shares shall be outstanding (each a "Dividend Due Date"), commencing on the first such date following the issuance of the Series L Shares. Dividends on each Series L Share shall accrue and be cumulative from and after the date of issuance of such Series L Share and dividends payable for any partial quarterly period shall be calculated on the basis of a year of 360 days consisting of twelve 30-day months. Dividends shall be payable to the holders of record as they appear on the Corporation's stock transfer books at the close of business on the record date for such payment, which the Board of Directors shall fix not more than 60 days or less than 10 days preceding a Dividend Due Date. Holders of the Series L Shares shall not be entitled to any dividends, whether paid in cash, property or stock, in excess of the cumulative dividends as provided in this paragraph (a) and shall not be entitled to any interest thereon.

(b) Unless all cumulative dividends accrued on the Series L Shares have been or contemporaneously are declared and paid or declared and a sum set apart sufficient for such payment through the most recent Dividend Payment Date, then (i) except as provided below, no dividend or other distribution shall be declared or paid or set apart for payment on any Parity Securities, (ii) no dividend or other distribution shall be declared or paid or set aside for payment upon the Junior Securities (other than a dividend or distribution paid in shares of, or warrants, rights or options exercisable for or convertible into, Junior Securities) and (iii) no Junior Securities shall be redeemed, purchased or otherwise acquired for any consideration, nor shall any monies be paid to or made available for a sinking fund for the redemption of any Junior Securities, except by conversion of Junior Securities into, or by exchange of Junior Securities for, other Junior Securities. If any accrued dividends are not paid or set apart with respect to the Series L Shares and any Parity Securities, all dividends declared with respect to the Series L Shares and any Parity Securities shall be declared pro rata on a share-by-share basis among all Series L Shares and Parity Securities outstanding at the time.

(4) Conversion.

(a) Each Series L Share shall be convertible, at any time, at the option of the holder thereof into that number of fully paid and nonassessable shares of the Common Stock obtained by dividing \$25.00 by the Conversion Price then in effect under the terms of this subsection (4). Unless and until changed in accordance with the terms of this subsection (4), the Conversion Price shall be \$41.25. In order for a holder of the Series L Shares to effect such conversion, the holder shall deliver to KeyCorp Shareholder Services, Inc., Dallas, Texas, or such other agent as may be designated by the Board of Directors as the transfer agent for the Series L Shares (the "Transfer Agent"), the certificates representing such shares in accordance with paragraph (b) below accompanied by written notice jointly addressed to the Corporation and the Transfer

Agent that the holder thereof elects to convert such shares or a specified portion thereof. Each conversion shall be deemed to have been effected immediately prior to the close of business on the date on which the certificates representing the Series L Shares being converted shall have been delivered to the Transfer Agent in accordance with each term and condition of paragraph (b) below, accompanied by the written notice jointly addressed to the Corporation and the Transfer Agent of such conversion (the “Conversion Date”), and the person or persons in whose names any certificate or certificates for shares of Common Stock shall be issuable upon such conversion shall be deemed to have become the holder or holders of record of the Common Stock represented thereby at such time. As of the close of business on the Conversion Date, the Series L Shares shall be deemed to cease to be outstanding and all rights of any holder thereof shall be extinguished except for the rights arising under the Common Stock issued in exchange therefor and the right to receive accrued and unpaid dividends on such Series L Shares through the Conversion Date on the terms specified in paragraph (c) below.

(b) In connection with surrendering to the Transfer Agent the certificates representing (or formerly representing) Series L Shares, the holder shall furnish the Transfer Agent with transfer instruments satisfactory to the Corporation and sufficient to transfer the Series L Shares being converted to the Corporation free of any adverse interest or claims. As promptly as practicable after the surrender of the Series L Shares in accordance with this paragraph and any other requirement under this subsection (4), the Corporation, acting directly or through the Transfer Agent, shall issue and deliver to such holder certificates for the number of whole shares of Common Stock issuable upon the conversion of such shares in accordance with the provisions hereof (along with any interest payment specified in paragraph (a) above and any cash payment in lieu of fractional shares specified in paragraph (d) below). Certificates will be issued for the balance of any remaining Series L Shares in any case in which fewer than all of the Series L Shares are converted. Any conversion under paragraph (a) shall be effected at the Conversion Price in effect on the Conversion Date.

(c) If the Conversion Date with respect to any Series L Share occurs after any record date with respect to the payment of a dividend on the Series L Shares (the “Dividend Record Date”) and on or prior to the Dividend Due Date, then (i) the dividend due on such Dividend Due Date shall be payable to the holder of record of such share as of the Dividend Record Date and (ii) the dividend that accrues from the close of business on the Dividend Record Date through the Conversion Date shall be payable to the holder of record of such share as of the Conversion Date. Except as provided in this subsection (4), no payment or adjustment shall be made upon any conversion on account of any dividends accrued on Series L Shares surrendered for conversion or on account of any dividends on the Common Stock issued upon conversion.

(d) No fractional interest in a share of Common Stock shall be issued by the Corporation upon the conversion of any Series L Share. In lieu of any such fractional interest, the holder that would otherwise be entitled to such fractional interest shall receive a cash payment (computed to the nearest cent) equal to such fraction multiplied by the market value of a share of Common Stock, which shall be deemed to equal the last reported per share sale price of Common Stock on the New York Stock Exchange (“NYSE”) (or, if the Common Stock is not then traded on the NYSE, the last reported per share sale price on such other national securities exchange on which the Common Stock is listed or admitted to trading or, if not then listed or admitted to trading on any national securities exchange, the last quoted bid price in the over-the-counter market as reported by the National Association of Securities Dealers, Inc. Automated Quotation System (“NASDAQ”), or any similar system of automated dissemination of securities prices) on the trading day immediately prior to the Conversion Date.

(e) The Conversion Price shall be adjusted from time to time as follows:

1. If the Corporation effects any (i) dividend or other distribution upon or in redemption of the Common Stock payable in the form of shares of capital stock of the Corporation or any of its subsidiaries or in the form of any other property (other than cash dividends paid in the ordinary course), (ii) combination of outstanding shares of Common Stock into a smaller number of shares of Common Stock, (iii) split or other subdivision of outstanding shares of Common Stock into a larger number of shares of Common Stock, or (iv) reorganization, exchange or reclassification of Common Stock, or any consolidation or merger of the Corporation with another corporation, or the sale of all or substantially all of its assets to another corporation, or any other transaction effected in a manner such that holders of outstanding Common Stock shall be entitled to receive (either directly, or upon subsequent liquidation) stock, securities or other property with respect to or in exchange for Common Stock (a “Diluting Event”), then as a condition of such Diluting Event, lawful, appropriate, equitable and adequate adjustments shall be made to the Conversion Price whereby the holders of the Series L Shares shall thereafter be entitled to receive (under the same terms otherwise applicable to their receipt of the Common Stock

upon conversion of the Series L Shares), in lieu of or in addition to, as the case may be, the number of shares of Common Stock issuable under this subsection (4), such shares of stock, securities or other property as may be issued or payable with respect to or in exchange for that number of shares of Common Stock to which such holders of Series L Shares were so entitled under this subsection (4), and in any such case appropriate, equitable and adequate adjustments shall also be made to such resulting consideration in like manner in connection with any subsequent Diluting Events. It is the intention of the parties that the foregoing shall have the effect of entitling such holders of Series L Shares to receive upon the due exercise of their conversion rights under this subsection (4) such stock, securities and other property (other than cash dividends paid in the ordinary course) as such holders would have received had they held the Common Stock issuable under this subsection (4) (or any replacement or additional stock, securities or property, as applicable) on the record date of such Diluting Event.

2. No adjustment in the Conversion Price shall be required unless such adjustment would require an increase or decrease of at least 5% of such price.

3. Whenever the Conversion Price is adjusted as herein provided, the Corporation shall promptly deliver to the Transfer Agent an officer's certificate setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment, which certificate shall constitute conclusive evidence, absent manifest error, of the correctness of such adjustment. Promptly after delivery of such certificate, the Corporation shall prepare and mail a notice to each holder of Series L Shares at each such holder's last address as the same appears on the books of the Corporation, which notice shall set forth the Conversion Price and a brief statement of the facts requiring the adjustment. The failure of the Corporation to take any such action shall not invalidate any corporate action by the Corporation.

(f) The Corporation covenants that (A) all shares of Common Stock that may be issued upon conversions of Series L Shares will upon issue be duly and validly issued, fully paid and nonassessable, and free of all liens, charges or preemptive rights, and (B) it will at all times reserve and keep available, free from preemptive rights, out of the aggregate of its authorized but unissued shares of Common Stock or its issued shares of Common Stock held in its treasury, or both, for the purpose of effecting conversions of Series L Shares, the whole number of shares of Common Stock deliverable upon the conversion of all outstanding Series L Shares not theretofore converted.

(5) Liquidation Preference.

(a) Upon any voluntary or involuntary dissolution, liquidation, or winding up of the Corporation (for the purposes of this subsection (5), a "Liquidation"), the holder of each Series L Share then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its shareholders, an amount equal to \$25 per share plus all dividends (whether or not declared or due) accrued and unpaid on such share on the date fixed for the distribution of assets of the Corporation to the holders of Series L Shares. With respect to the distribution of the Corporation's assets upon a Liquidation, the Series L Shares shall rank prior to Junior Securities, *pari passu* with the Parity Securities and junior to the Senior Securities.

(b) If upon any Liquidation of the Corporation, the assets available for distribution to the holders of Series L Shares and any Parity Securities then outstanding shall be insufficient to pay in full the liquidation distributions to the holders of outstanding Series L Shares and Parity Securities in accordance with the terms of these Articles of Incorporation, then the holders of such shares shall share ratably in such distribution of assets in accordance with the amount that would be payable on such distribution if the amounts to which the holders of the Series L Shares and Parity Securities are entitled were paid in full.

(c) Neither the voluntary sale, conveyance, lease, pledge, exchange or transfer of all or substantially all the property or assets of the Corporation, the merger or consolidation of the Corporation into or with any other corporation, the merger of any other corporation into the Corporation, a share exchange with any other corporation, nor any purchase or redemption of some or all of the shares of any class or series of stock of the Corporation, shall be deemed to be a Liquidation of the Corporation for the purposes of this subsection (5) (unless in connection therewith the Liquidation of the Corporation is specifically approved).

(d) The holder of any Series L Shares shall not be entitled to receive any payment owed for such shares under this subsection (5) until such holder shall cause to be delivered to the Corporation the certificate or certificates representing such Series L Shares and transfer instruments satisfactory to the Corporation and sufficient to transfer such Series L

Shares to the Corporation free of any adverse interest. No interest shall accrue on any payment upon Liquidation after the due date thereof.

(e) After payment of the full amount of the liquidating distribution to which they are entitled, the holders of Series L Shares will not be entitled to any further participation in any distribution of assets by the Corporation.

(6) Preemptive Rights. The Series L Shares is not entitled to any preemptive or subscription rights in respect of any securities of the Corporation.

F. Series CC Junior Participating Preferred Shares:

(1) Designation and Amount. The shares of such series shall be designated as “Series CC Junior Participating Preferred Shares” (the “Series CC Shares”) and the number of shares constituting the Series CC Shares shall be 150,000. Such number of shares may be increased or decreased by resolution of the Board of Directors; provided, that no decrease shall reduce the number of Series CC Shares to a number less than the number of shares then outstanding plus the number of shares reserved for issuance upon the exercise of outstanding options, rights or warrants or upon the conversion of any outstanding securities issued by the Corporation convertible into Series CC Shares.

(2) Dividends and Distributions.

(a) Subject to the rights of the holders of any shares of any series of Preferred Stock (or any similar stock) ranking prior and superior to the Series CC Shares with respect to dividends, the holders of Series CC Shares shall be entitled to receive, when, as and if declared by the Board of Directors out of funds legally available for the purpose, quarterly dividends payable in cash on the dividend date declared on the Common Stock, par value \$1.00 per share (the “Common Stock”) in each year (each such date being referred to herein as a “Quarterly Dividend Payment Date”), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series CC Shares, in an amount per share (rounded to the nearest cent), subject to the provision for adjustment hereinafter set forth, equal to 10,000 times the aggregate per share amount of all cash dividends, and 10,000 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions, declared on the Common Stock of the Corporation since the immediately preceding Quarterly Dividend Payment Date or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series CC Shares, other than, in each case, a dividend payable in shares of Common Stock or a subdivision of the outstanding shares of Common Stock (by reclassification or otherwise). In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount to which holders of Series CC Shares were entitled immediately prior to such event under the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.

(b) The Corporation shall declare a dividend or distribution on the Series CC Shares as provided in paragraph (a) of this Section immediately after it declares a dividend or distribution on the Common Stock (other than a dividend payable in shares of Common Stock).

(c) Dividends, to the extent payable as provided in paragraphs (a) and (b) of this Section, shall begin to accrue and be cumulative on outstanding Series CC Shares from the Quarterly Dividend Payment Date next preceding the date of issue of such shares, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of Series CC Shares entitled to receive a quarterly dividend and before such Quarterly Dividend Payment Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the Series CC Shares in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at

the time outstanding. The Board of Directors may fix a record date for the determination of holders of Series CC Shares entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than 60 days prior to the date fixed for the payment thereof.

(3) Voting Rights. The holders of Series CC Shares shall have the following voting rights:

(a) Subject to the provision for adjustment hereinafter set forth, each share of Series CC Shares shall entitle the holder thereof to 10,000 votes on all matters submitted to a vote of the stockholders of the Corporation. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the number of votes per share to which holders of Series CC Shares were entitled immediately prior to such event shall be adjusted by multiplying such number by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.

(b) Except as otherwise provided herein, in any other articles of amendment creating a series of Preferred Stock or any similar stock, or by law, the holders of Series CC Shares and the holders of shares of Common Stock and any other capital stock of the Corporation having general voting rights shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.

(c) Except as set forth herein, or as otherwise provided by law, holders of Series CC Shares shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with holders of Common Stock as set forth herein) for taking any corporate action.

(4) Certain Restrictions.

(a) Whenever quarterly dividends or other dividends or distributions payable on the Series CC Shares as provided in Article III.F. (2) are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on Series CC Shares outstanding shall have been paid in full, the Corporation shall not:

(i) declare or pay dividends, or make any other distributions, on any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series CC Shares;

(ii) declare or pay dividends, or make any other distributions, on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series CC Shares, except dividends paid ratably on the Series CC Shares and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) redeem or purchase or otherwise acquire for consideration shares of any stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series CC Shares, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such junior stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series CC Shares; or

(iv) redeem or purchase or otherwise acquire for consideration any Series CC Shares, or any shares of stock ranking on a parity with the Series CC Shares, except in accordance with a purchase offer made in writing or by publication (as determined by the Board of Directors) to all holders of such shares upon such terms as the Board of Directors, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(b) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under paragraph (a) of this Articles III.F.(4), purchase or otherwise acquire such shares at such time and in such manner.

(5) Reacquired Shares. Any Series CC Shares purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and cancelled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of Preferred Stock and may be reissued as part of a new series of Preferred Stock subject to the conditions and restrictions on issuance set forth herein, in the Articles of Incorporation, or in any other Articles of Amendment to the Articles of Incorporation creating a series of Preferred Stock or any similar stock or as otherwise required by law.

(6) Liquidation, Dissolution or Winding Up. Upon any liquidation, dissolution or winding up of the Corporation, no distribution shall be made (1) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series CC Shares unless, prior thereto, the holders of Series CC Shares shall have received \$10,000 per share, plus an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, provided that the holders of Series CC Shares shall be entitled to receive an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 10,000 times the aggregate amount to be distributed per share to holders of shares of Common Stock, or (2) to the holders of shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series CC Shares, except distributions made ratably on the Series CC Shares and all such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the aggregate amount to which holders of Series CC Shares were entitled immediately prior to such event under the proviso in clause (1) of the preceding sentence shall be adjusted by multiplying such amount by a fraction the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.

(7) Consolidation, Merger, etc. In case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the shares of Common Stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case each share of Series CC Shares shall at the same time be similarly exchanged or changed into an amount per share, subject to the provision for adjustment hereinafter set forth, equal to 10,000 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of Common Stock is changed or exchanged. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision or combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of Series CC Shares shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event.

(8) No Redemption. The Series CC Shares shall not be redeemable.

(9) Rank. The Series CC Shares shall rank, with respect to the payment of dividends and the distribution of assets, junior to all series of any other class of the Corporation's Preferred Stock.

(10) Amendment. The Articles of Incorporation of the Corporation shall not be amended in any manner which would materially alter or change the powers, preferences or special rights of the Series CC Shares so as to affect them adversely without the affirmative vote of the holders of at least two-thirds of the outstanding Series CC Shares, voting together as a single class.

ARTICLE IV
Directors

A. Number of Directors. The business and affairs of this Corporation shall be managed under the direction of the Board of Directors. The number of directors comprising the Board of Directors of this Corporation (exclusive of directors who may be elected by the holders of any one or more series of Preferred Stock voting separately) shall be determined from time to time by resolution adopted by the affirmative votes of both (i) 80% of the directors then in office and (ii) a majority of the Continuing Directors (as defined in Article V(D)), voting as a separate group, provided, however, that no decrease in the number of directors shall shorten the term of any incumbent director.

B. Term. All directors elected by shareholders at and after the 2012 annual meeting of shareholders shall hold office until the next annual meeting of shareholders and until their successors are duly elected and qualified. Directors whose terms do not expire at the 2012 annual meeting of shareholders shall hold office until the annual meeting for the year in which the director's term expires and until their successors are duly elected and qualified.

C. Vacancies. Except as provided in Article IV(G) hereof, any vacancy on the Board (including any vacancy resulting from an increase in the authorized number of directors or from a failure of the shareholders to elect the full number of authorized directors) may, notwithstanding any resulting absence of a quorum of directors, be filled only by the Board of Directors, acting by vote of both (i) a majority of the directors then in office and (ii) a majority of all the Continuing Directors, voting as a separate group, and any director so appointed shall serve until the next shareholders' meeting held for the election of directors and until his successor is duly elected and qualified.

D. Removal. Subject to Article IV(G) hereof and notwithstanding any other provisions of these Articles or the Bylaws of this Corporation, any director or the entire Board of Directors may be removed at any time, but only for cause, by the affirmative vote at a meeting of shareholders called for such purpose of the holders of both (i) a majority of the Total Voting Power (as defined in Article V(D) hereof) entitled to be cast by the holders of Voting Stock (as defined in Article V(D) hereof), voting together as a single class, and (ii) a majority of the Total Voting Power entitled to be cast by the Independent Shareholders (as defined in Article V(D) hereof), voting as a separate group. At the same meeting in which the shareholders remove one or more directors, a successor or successors may be elected for the unexpired term of the director or directors removed. Except as set forth in this Article, directors shall not be subject to removal.

E. Tender Offers and Other Extraordinary Transactions. In connection with the exercise of its judgment in determining what is in the best interest of the Corporation and its stockholders when evaluating a Business Combination (as defined in Article V(D) hereof) or a tender or exchange offer or a proposal by another Person or Persons to make a tender or exchange offer, the Board of Directors of the Corporation shall consider, in addition to the adequacy of the amount to be paid in connection with any such transaction, all of the following factors and any other factors which it deems relevant: (i) the social and economic effects of the transaction on the Corporation and its subsidiaries, and their respective employees, customers, creditors and other elements of the communities in which they operate or are located, (ii) the business and financial condition and earnings prospects of the acquiring Person or Persons, including, but not limited to, debt service and other existing or likely financial obligations of the acquiring Person or Persons, and the possible effect of such conditions upon the Corporation and its Subsidiaries and the other elements of the communities in which the Corporation and its subsidiaries operate or are located, and (iii) the competence, experience and integrity of the acquiring Person or Persons and its or their management.

F. Board Qualifications.

(1) Except as otherwise provided in Article IV(G) hereof, no person shall be eligible for nomination, election or service as a director of the Corporation who shall:

- (a) in the opinion of the Board of Directors fail to respond satisfactorily to the Corporation respecting any inquiry of the Corporation for information to enable the Corporation to make any certification required by the Federal Communications Commission under the Anti-Drug Abuse Act of 1988 or to determine the eligibility of such person under this Article;
- (b) have been arrested or convicted of any offense concerning the distribution or possession of, or trafficking in, drugs or other controlled substances, provided that in the case of an arrest the Board of Directors may in its discretion determine that notwithstanding such arrest such persons shall remain eligible under this Article; or

(c) have engaged in actions that could lead to such an arrest or conviction and that the Board of Directors determines would make it unwise for such person to serve as a director of the Corporation.

(2) Any person serving as a director of the Corporation shall automatically cease to be a director on such date as he ceases to have the qualifications set forth in paragraph (1) above, and his position shall be considered vacant within the meaning of Article IV(C) hereof.

G. Directors Elected by Preferred Shareholders. Notwithstanding anything in these Articles of Incorporation to the contrary, whenever the holders of any one or more series of Preferred Stock shall have the right, voting separately as a class, to elect one or more directors of the Corporation, the provisions of these Articles of Incorporation (as they may be duly amended from time to time) fixing the rights and preferences of such Preferred Stock shall govern with respect to the nomination, election, term, removal, vacancies or other related matters with respect to such directors.

ARTICLE V Certain Business Combinations

A. Vote Required in Business Combinations. No Business Combination may be effected unless all of the following conditions have been fulfilled:

(1) In addition to any vote otherwise required by law or these Articles, the proposal to effect a Business Combination shall have been approved by (i) a majority of the directors then in office and a majority of the Continuing Directors and (ii) by the affirmative votes of both of the following:

(a) 80% of the Total Voting Power entitled to be cast by holders of outstanding shares of Voting Stock of this Corporation, voting as a separate voting group; and

(b) Two-thirds of the Total Voting Power entitled to be cast by the Independent Stockholders present or duly represented at a meeting, voting as a separate voting group.

(2) A proxy or information statement describing the proposed Business Combination and complying with the requirements of the Securities Exchange Act of 1934, as amended (the “Act”), and the rules and regulations thereunder (or any subsequent provisions replacing the Act, rules or regulations as a whole or in part) is mailed to all shareholders of the Corporation at least 30 days prior to the consummation of such Business Combination (regardless of whether such proxy or information statement is required pursuant to the Act or subsequent provisions).

B. Nonapplicability of Voting Requirements. The vote required by Paragraph A of this Article does not apply to a Business Combination if all conditions specified in either of paragraphs 1 or 2 below are met:

(1) The proposed Business Combination is approved prior to the time the Related Person involved in the proposed transaction became a Related Person by the affirmative votes of both a majority of the directors then in office and a majority of the Continuing Directors, voting as a separate group.

(2) All of the following five conditions have been met:

(a) The aggregate amount of the cash and the Market Value on the Valuation Date of consideration other than cash to be received per share by all holders of Common Stock in such Business Combination is at least equal to the highest of the following:

1. the highest per share price, including any brokerage commissions, transfer taxes and soliciting dealers’ fees, paid by or on behalf of the Related Person for any shares of Common Stock of the same class or series acquired by it within the two-year period immediately prior to the Announcement Date or in the transaction in which it became a Related Person, whichever is higher;

2. The Market Value per share of Common Stock of the same class or series on the Announcement Date or on the Determination Date, whichever is higher; or

3. The price per share equal to the Market Value per share of Common Stock of the same class or series determined pursuant to clause (2) immediately preceding, multiplied by the fraction of the highest per share price, including any brokerage commissions, transfer taxes and soliciting dealers' fees, paid by or for the Related Person for any shares of Common Stock of the same class or series acquired by it within the two-year period immediately prior to the Announcement Date, over the Market Value per share of Common Stock of the same class or series on the first day in such two-year period on which the Related Person acquired any shares of Common Stock.

(b) The aggregate amount of the cash and the Market Value as of the Valuation Date of consideration other than cash to be received per share by holders of shares of any class or series of outstanding stock other than Common Stock is at least equal to the highest of the following, whether or not the Related Person has previously acquired any shares of a particular class or series of stock:

1. The highest per share price, including any brokerage commissions, transfer taxes and soliciting dealers' fees, paid by or for the Related Person for any shares of such class of stock acquired by it within the two-year period immediately prior to the Announcement Date or in the transaction in which it became a Related Person, whichever is higher;
2. The highest preferential amount per share to which the holders of shares of such class of stock are entitled in the event of any voluntary or involuntary liquidation, dissolution or winding up of this Corporation;
3. The Market Value per share of such class of stock on the Announcement Date or on the Determination Date, whichever is higher; or
4. The price per share equal to the Market Value per share of such class of stock determined pursuant to clause (3) immediately preceding, multiplied by the fraction of the highest per share price, including any brokerage commissions, transfer taxes and soliciting dealers' fees, paid by or for the Related Person for any shares of any class of Voting Stock acquired by it within the two-year period immediately prior to the Announcement Date, over the Market Value per share of the same class of Voting Stock on the first day in such two-year period on which the Related Person acquired any shares of the same class of Voting Stock.

(c) The consideration to be received by holders of any class or series of outstanding stock is to be in cash or in the same form as the Related Person has previously paid for shares of the same class or series of stock. If the Related Person has paid for shares of any class of stock with varying forms of consideration, the form of consideration for such class of stock shall be either cash or the form used to acquire the largest number of shares of such class or series of stock previously acquired by it.

(d) After the Related Person has become a Related Person and prior to the consummation of such Business Combination:

1. There shall have been no failure to declare and pay at the regular date therefor any full periodic dividends, cumulative or not, on any outstanding Preferred Stock of this Corporation;
2. There shall have been no reduction in the annual rate of dividends paid on any class or series of stock of this Corporation that is not Preferred Stock except as necessary to reflect any subdivision of the stock, and no failure to increase the annual rate of dividends as necessary to reflect any reclassification, including any reverse stock split, recapitalization, reorganization, or any similar transaction which has the effect of reducing the number of outstanding shares of the stock; and
3. The Related Person did not become the Beneficial Owner of any additional shares of stock of this Corporation except as part of the transaction which resulted in such Related Person becoming a Related Person or by virtue of proportionate stock splits or stock dividends.

The provisions of clause (1) and (2) immediately preceding shall not apply if no Related Person or an Affiliate or Associate of the Related Person voted as a director of this Corporation in a manner inconsistent with such clauses and the Related Person, within ten days after any act or failure to act inconsistent with such clauses, notifies the Board of Directors of this Corporation in writing that the Related Person disapproves thereof and requests in good faith that the Board of Directors rectify such act or failure to act.

(e) After the Related Person has become a Related Person, the Related Person may not have received the benefit, directly or indirectly, except proportionately as a shareholder, of any loans, advances, guarantees, pledges or other financial assistance or any tax credits or other tax advantages provided by this Corporation or any of its Subsidiaries, whether in anticipation of or in connection with such Business Combination or otherwise.

C. Alternative Shareholder Vote for Business Combinations. In the event the conditions set forth in Subparagraph (B)(1) or (B)(2) have been met, the affirmative vote required of shareholders in order to approve the proposed Business Combination shall be 66-2/3% of the Total Voting Power present or duly represented at the meeting called for such purpose.

D. Definitions. The following terms, for all purposes of these Articles or the By-laws of this Corporation, shall have the following meaning:

(1) An “Affiliate” of, or a person “affiliated with,” a specified person means a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, the person specified.

(2) “Announcement Date” means the first general public announcement of the proposal or intention to make a proposal of the Business Combination or its first communication generally to shareholders of this Corporation, whichever is earlier.

(3) “Associate,” when used to indicate a relationship with any person, means any of the following:

(a) Any corporation or organization, other than this Corporation, of which such person is an officer, director or partner or is, directly or indirectly, the Beneficial Owner of 10% or more of any class of Equity Securities.

(b) Any trust or other estate in which such person has a substantial beneficial interest or as to which such person serves as trustee or in a similar fiduciary capacity.

(c) Any relative or spouse of such person, or any relative of such spouse, who has the same home as such person.

(d) Any investment company registered under the Investment Company Act of 1940 for which such person serves as investment advisor.

(4) A person shall be deemed to be the “Beneficial Owner” of any shares of capital stock (regardless whether owned of record):

(a) Which that person or any of its Affiliates or Associates, directly or indirectly, owns beneficially;

(b) Which such person or any of its Affiliates or Associates has (i) the right to acquire (whether exercisable immediately or only after the passage of time) pursuant to any agreement, arrangement or understanding or upon the exercise of conversion rights, exchange rights, warrants or options, or otherwise, or (ii) the right to vote pursuant to any agreement, arrangement or understanding; or

(c) Which are beneficially owned, directly or indirectly, by any other person with which such person or any of its Affiliates or Associates has any agreement, arrangement or understanding for the purpose of acquiring, holding, voting or disposing of any shares of voting capital stock of the corporation or any of its subsidiaries.

(5) “Business Combination” means any of the following transactions, when entered into by the Corporation or a Subsidiary with, or upon a proposal by, a Related Person:

(a) The merger or consolidation of, or an exchange of securities by, the Corporation or any Subsidiary;

(b) The sale, lease, exchange, mortgage, pledge, transfer or any other disposition (in one or a series of transactions) of any assets of the Corporation, or of any Subsidiary, having an aggregate book or fair market value of \$1,000,000 or more, measured at the time the transaction or transactions are approved by the Board of Directors;

(c) The adoption of a plan or proposal for the liquidation or dissolution of the Corporation or any Subsidiary;

- (d) The issuance or transfer by the Corporation or any Subsidiary (in one or a series of transactions) of securities of the Corporation, or of any Subsidiary, having a fair market value of \$1,000,000 or more;
- (e) The reclassification of securities (including a reverse stock split), recapitalization, consolidation or any other transaction (whether or not involving a Related Person) which has the direct or indirect effect of increasing the voting power (regardless whether then exercisable) or the proportionate amount of the outstanding shares of any class or series of Equity Securities of this Corporation or any of its Subsidiaries held by a Related Person, or any Associate or Affiliate of a Related Person;
- (f) Any loans, advances, guarantees, pledges or other financial assistance or any tax credits or other tax advantages provided by the Corporation or any Subsidiary to a Related Person or any Affiliate or Associate thereof, except proportionately as a shareholder; or
- (g) Any agreement, contract or other arrangement providing directly or indirectly for any of the foregoing.
- (6) “Capital Stock” means any Common Stock, Preferred Stock or other capital stock of the Corporation, or any bonds, debentures, or other obligations granted voting rights by the Corporation pursuant to La. R.S. 12:75H.
- (7) “Common Stock” means any stock other than a class or series of preferred or preference stock.
- (8) “Continuing Director” shall mean any member of the Board of Directors who is not a Related Person or an Affiliate or Associate thereof, and who was a member of the Board of Directors prior to the time that the Related Person became a Related Person, and any successor to a Continuing Director who is not a Related Person or an Affiliate or Associate thereof and was recommended to succeed a Continuing Director by a majority of Continuing Directors who were then members of the Board of Directors, provided that, in the absence of a Related Person, any reference to “Continuing Directors” shall mean all directors then in office.
- (9) “Control,” including the terms “controlling,” “controlled by” and “under common control with,” means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting securities, by contract or otherwise. The beneficial ownership of 10% or more of the votes entitled to be cast by a corporation’s voting stock creates a presumption of control.
- (10) “Determination Date” means the date on which a Related Person first became a Related Person.
- (11) “Equity Security” means any of the following:
- (a) Any stock or similar security, certificate of interest or participation in any profit sharing agreement, voting trust certificate or certificate of deposit for an equity security.
- (b) Any security convertible, with or without consideration, into an equity security, or any warrant or other security carrying any right to subscribe to or purchase an equity security.
- (c) Any put, call, straddle or other option or privilege of buying an equity security from or selling an equity security to another without being bound to do so.
- (12) “Independent Shareholder” or “Independent Stockholder” means a holder of Voting Stock of this Corporation who is not a Related Person.
- (13) “Market Value” means the following:
- (a) In the case of stock, the highest closing sale price on the date or during the period in question of a share of such stock on the principal United States securities exchange registered under the Securities Exchange Act of 1934 on which such stock is listed or, if such stock is not listed on any such exchange, the highest closing bid quotation with respect to a share of such stock on the date or during the period in question on the National Association of Securities Dealers, Inc., Automated Quotations Systems, or any alternative system then in use, or, if no such quotations are available, the fair market value on the date or during the period in question of a share of such stock as determined by a majority of the Continuing Directors of this Corporation in good faith.

(b) In the case of property other than cash or stock, the fair market value of such property on the date or during the period in question as determined by a majority of the Continuing Directors of this Corporation in good faith.

(14) A “person” shall mean any individual, firm, corporation or other entity, or a group of persons acting or agreeing to act together in the manner set forth in Rule 13d-5 under the Securities Exchange Act of 1934, as in effect on January 1, 1984.

(15) “Related Person” means any person (other than the Corporation, a Subsidiary or any profit sharing, employee stock ownership or other employee benefit plan of the Corporation or any Subsidiary or any trust, trustee of or fiduciary with respect to any such plan acting in such capacity) who (a) is the direct or indirect Beneficial Owner of shares of Capital Stock representing more than 10% of the outstanding Total Voting Power entitled to vote for the election of directors, and any Affiliate or Associate of any such person, or (b) is an Affiliate or Associate of the Corporation and at any time within the two-year period immediately prior to the date in question was the Beneficial Owner, directly or indirectly, of shares of Capital Stock (including two or more classes or series voting together as a single class) representing 10% or more of the outstanding Total Voting Power entitled to vote for the election of directors. For the purpose of determining whether a person is the Beneficial Owner of a percentage, specified in this Article, of the outstanding Total Voting Power, the number of shares of Voting Stock deemed to be outstanding shall include shares deemed owned by that person through application of Article V(D)(3) but shall not include any other shares which may be issuable to any other person.

(16) “Subsidiary” means any corporation of which Voting Stock having a majority of the votes entitled to be cast is owned, directly or indirectly, by this Corporation.

(17) “Total Voting Power,” when used in reference to any particular matter properly brought before the shareholders for their consideration and vote, means the total number of votes that holders of Capital Stock are entitled to cast with respect to such matter.

(18) “Valuation Date” means the following:

(a) For a Business Combination voted upon by shareholders, the latter of the date prior to the date of the shareholders’ vote and the day 20 days prior to the consummation of the Business Combination; and

(b) For a Business Combination not voted upon by the shareholders, the date of the consummation of the Business Combination.

(19) “Voting Stock” means shares of Capital Stock of the Corporation entitled to vote generally in the election of directors.

E. Benefit of Statute. This Corporation claims and shall have the benefit of the provisions of R.S. 12:133 except that the provisions of R.S. 12:133 shall not apply to any business combination involving an interested shareholder that is an employee benefit plan or related trust of this Corporation.

ARTICLE VI Shareholders’ Meetings

A. Written Consents. Any action required or permitted to be taken at any annual or special meeting of shareholders may be taken only upon the vote of the shareholders, present in person or represented by duly authorized proxy, at an annual or special meeting duly noticed and called, as provided in the Bylaws of the Corporation, and may not be taken by a written consent of the shareholders pursuant to the Business Corporation Law of the State of Louisiana.

B. Special Meetings. Subject to the terms of any outstanding class or series of Preferred Stock that entitles the holders thereof to call special meetings, the holders of a majority of the Total Voting Power of the Corporation shall be required to cause the Secretary of the Corporation to call a special meeting of shareholders pursuant to La. R.S. 12:73B (or any successor provision). Nothing in this Article VI shall limit the power of the President of the Corporation or its Board of Directors to call a special meeting of shareholders.

ARTICLE VII

Limitation of Liability and Indemnification

A. Limitation of Liability. No director or officer of the Corporation shall be liable to the Corporation or to its shareholders for monetary damages for breach of his fiduciary duty as a director or officer, provided that the foregoing provision shall not eliminate or limit the liability of a director or officer for (1) any breach of his duty of loyalty to the Corporation or its shareholders; (2) acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; (3) liability for unlawful distributions of the Corporation's assets to, or redemptions or repurchases of the Corporation's shares from, shareholders of the Corporation, under and to the extent provided in La. R.S. 12:92D; or (4) any transaction from which he derived an improper personal benefit.

B. Authorization of Further Actions. The Board of Directors may (1) cause the Corporation to enter into contracts with its directors and officers providing for the limitation of liability set forth in this Article to the fullest extent permitted by law, (2) adopt By-laws or resolutions, or cause the Corporation to enter into contracts, providing for indemnification of directors and officers of the Corporation and other persons (including but not limited to directors and officers of the Corporation's direct and indirect Subsidiaries) to the fullest extent permitted by law and (3) cause the Corporation to exercise the insurance powers set forth in La. R.S. 12:83F, notwithstanding that some or all of the members of the Board of Directors acting with respect to the foregoing may be parties to such contracts or beneficiaries of such By-laws or resolutions or the exercise of such powers. No repeal or amendment of any such By-laws or resolutions limiting the right to indemnification thereunder shall affect the entitlement of any person to indemnification whose claim thereto results from conduct occurring prior to the date of such repeal or amendment.

C. Subsidiaries. The Board of Directors may cause the Corporation to approve for the officers and directors of its direct and indirect Subsidiaries limitation of liability, indemnification and insurance provisions comparable to the foregoing.

D. Amendment of Article. Notwithstanding any other provisions of these Articles of Incorporation, the affirmative vote of the holders of at least 80% of the Total Voting Power shall be required to amend or repeal this Article VII, and any amendment or repeal of this Article shall not adversely affect any elimination or limitation of liability of a director or officer of the Corporation under this Article with respect to any action or inaction occurring prior to the time of such amendment or repeal.

ARTICLE VIII Reversion

Except for cash, shares or other property or rights payable or issuable to the holders of Preferred Stock, the rights to which shall be determined under applicable state law, Cash, property or share dividends, shares issuable to shareholders in connection with a reclassification of stock, and the redemption price of redeemed shares, that are not claimed by the shareholders entitled thereto within one year after the dividend or redemption price became payable or the shares became issuable, despite reasonable efforts by the Corporation to pay the dividend or redemption price or deliver the certificates for the shares to such shareholders within such time, shall, at the expiration of such time, revert in full ownership to the Corporation, and the Corporation's obligation to pay such dividend or redemption price or issue such shares, as the case may be, shall thereupon cease, provided, however, that the Board of Directors may, at any time, for any reason satisfactory to it, but need not, authorize (i) payment of the amount of any cash or property dividend or redemption price or (ii) issuance of any shares, ownership of which has reverted to the Corporation pursuant to this Article, to the person or entity who or which would be entitled thereto had such reversion not occurred.

ARTICLE IX Amendments

A. Charter Amendments. Articles IV (other than paragraphs F and G), V, VI(A) and IX of these Articles of Incorporation shall not be amended in any manner (whether by modification or repeal of an existing Article or Articles or by addition of a new Article or Articles) except upon resolutions adopted by the affirmative vote of both (i) 80% of the Total Voting Power entitled to be cast by the holders of outstanding shares of Voting Stock, voting together as a single group, and (ii) two-thirds of the Total Voting Power entitled to be cast by the Independent Shareholders present or duly represented at a shareholders' meeting, voting as a separate group; provided, however, that if such resolutions shall first be adopted by both a majority of the directors then in office and a majority of the Continuing Directors, voting as a separate group, then

such resolutions shall be deemed adopted by the shareholders upon the affirmative vote of a majority of the Total Voting Power entitled to be cast by the holders of outstanding shares of Voting Stock, voting as a single group.

B. Bylaw Amendments. Bylaws of this Corporation may be altered, amended, or repealed or new Bylaws may be adopted by (i) the shareholders, but only upon the affirmative vote of both 80% of the Total Voting Power entitled to be cast by the holders of outstanding shares of Voting Stock, voting together as a single group, and two-thirds of the Total Voting Power entitled to be cast by the Independent Shareholders present or duly represented at a shareholders’ meeting, voting as a separate group, or (ii) the Board of Directors, but only upon the affirmative vote of both a majority of the directors then in office and a majority of the Continuing Directors, voting as a separate group.

* * * * *

\$215,000,000

AMENDED AND RESTATED CREDIT AGREEMENT

Dated as of October 23, 2020

among

QWEST CORPORATION,

THE LENDERS NAMED HEREIN,

COBANK, ACB,

as Administrative Agent

COBANK, ACB,

as Sole Bookrunner and Sole Lead Arranger

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AMENDED AND RESTATED CREDIT AGREEMENT (this “Agreement”), dated as of October 23, 2020, by and among QWEST CORPORATION, a Colorado corporation (the “Borrower”), the several banks and other financial institutions or entities from time to time parties to this Agreement (the “Lenders”) and COBANK, ACB (“CoBank”), as administrative agent (in such capacity, the “Administrative Agent”).

WITNESSETH:

WHEREAS, capitalized terms used herein and not defined in these recitals shall have the respective meanings set forth for such terms in Section 1.1 hereof;

WHEREAS, the Borrower, CoBank, as administrative agent, and the lenders party thereto from time to time previously entered into that certain Credit Agreement, dated as of February 20, 2015, as the same has been amended prior to the date hereof (as amended, the “Prior Credit Agreement”), pursuant to which the lenders thereunder extended certain financial accommodations to the Borrower as described therein;

WHEREAS, the Borrower, the Administrative Agent, and the Lenders under the Prior Credit Agreement have agreed to amend and restate the Prior Credit Agreement, and increase the commitments thereunder and in connection therewith the Borrower has requested that the Lenders provide to the Borrower a term loan facility in an aggregate principal amount not to exceed \$215,000,000, all as more particularly set forth in, and subject to the terms and conditions of, this Agreement; and

WHEREAS, the Lenders have indicated their willingness to extend such credit on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, in consideration of the above premises, the parties hereto hereby agree, and amend and restate the Prior Credit Agreement, as follows:

SECTION 1

DEFINITIONS.

1.1 Certain Defined Terms.

As used in this Agreement, the following terms shall have the following meanings (such meanings to be equally applicable to both the singular and plural forms of the terms defined):

“Accounting Changes” is defined in Section 1.2.

“Acquisitions” means the acquisition by the Borrower or its Subsidiaries of at least a majority of the Capital Stock or all or substantially all of the property of another Person, division of another Person or other business unit of another Person, whether or not involving a merger or consolidation of such Person; provided, that such Person or property is used or useful in a Permitted Line of Business.

“Adjusted Consolidated Net Worth” means, as of the date of determination, Consolidated Net Worth minus (a) deferred assets other than prepaid insurance, prepaid taxes, prepaid interest, extraordinary retirements, and deferred charges where such deferred charges are considered by Tribunals when setting rates, (b) patents, copyrights, trademarks, trade names, franchises, experimental expense, goodwill and similar intangible or intellectual property (other than goodwill and similar intangible or intellectual property arising from the purchase of Capital Stock or assets of a Person engaged in a Permitted Line of Business described on Schedule 3.17), and (c) unamortized debt discount and expense (other than debt discount and expense of the Companies located in jurisdictions where such items are considered by Tribunals when setting rates).

“Administrative Agent” is defined in the introduction to this Agreement.

“Affiliate” of any Person means any other individual or entity that directly or indirectly controls, or is controlled by, or is under common control with, such Person, and, for purposes of this definition only, “control,” “controlled by,” and “under common control with” mean possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such Person (whether through ownership of Voting Stock, by contract, or otherwise).

“Agent Indemnitee” is defined in Section 9.7.

“Agreement” means this Credit Agreement, as the same may be amended, supplemented, modified or restated from time to time.

“Anti-Corruption Laws” means laws or rules related to bribery or anti-corruption, including the United States Foreign Corrupt Practices Act of 1977, as amended, and the UK Bribery Act 2010.

“Applicable Margin” means, at the time of any determination thereof, for each Type of Loan, the margin of interest over the LIBOR Rate or the Base Rate which is applicable at the time of any determination of interest rates under this Agreement, which Applicable Margin shall be adjusted based on the Senior Unsecured Long-Term Debt Rating, as determined as of the last day of the immediately preceding fiscal quarter of the Borrower, as follows:

Senior Unsecured Long-Term Debt Rating	Applicable Margin	
	LIBOR Loans	Base Rate Loans
BBB/Baa2 or higher	1.50%	0.50%
BBB-/Baa3	1.75%	0.75%
BB+/Ba1	2.00%	1.00%
BB/Ba2	2.25%	1.25%
Lower than BB/Ba2	2.50%	1.50%

“Approved Bank” is defined in the definition of Cash Equivalents.

“Approved Fund” is defined in Section 10.18(b)(ii).

“Assignee” is defined in Section 10.18(b)(i).

“Assignment and Assumption” means an Assignment and Assumption, substantially in the form of Exhibit D.

“Attributable Debt” means, in respect of any sale and leaseback transaction, at the time of determination, the present value of the obligation of the lessee for the net rental payments during the remaining term of the lease included in such sale and leaseback transaction including any period for which such lease has been extended or may, at the sole option of the lessor, be extended. Such present value shall be calculated using the discount rate equal to the rate of interest implicit in such transaction, determined in accordance with GAAP.

“Bankruptcy Event” means, with respect to any Person, such Person becomes the subject of a bankruptcy or insolvency proceeding, or has had a receiver, conservator, trustee, administrator, custodian, assignee for the benefit of creditors or similar Person charged with the reorganization or liquidation of its business appointed for it; provided, that a Bankruptcy Event shall not result solely by virtue of any ownership interest, or the acquisition of any ownership interest, in such Person by a Tribunal or instrumentality thereof; provided, further, that such ownership interest does not result in or provide such Person with immunity from the jurisdiction of courts within the United States or from the enforcement of judgments or writs of attachment on its assets or permit such Person (or such Tribunal or instrumentality) to reject, repudiate, disavow or disaffirm any contracts or agreements made by such Person.

“Base Rate” means, for any day, a rate per annum announced by the Administrative Agent on the first Business Day of each week (rounded upwards, if necessary, to the next 1/16th of 1%) equal to the greatest of (a) the Prime Rate in effect on such day, (b) the Federal Funds Effective Rate in effect on such day plus 1/2 of 1% and (c) the LIBOR Rate that would be calculated as of such day (or if such day is not a Business Day, as of the next preceding Business Day), in respect of a proposed LIBOR Loan with a one-month Interest Period plus 1%.

“Base Rate Loan” means any Loan the rate of interest applicable to which is based upon the Base Rate.

“Below Investment Grade Rating” means a Debt Rating that meets each of the following criteria: (a) lower than Baa3 (or the equivalent) by Moody’s, (b) lower than BBB- (or the equivalent) by S&P and (c) and lower than BBB- (or the equivalent) by Fitch.

“Benchmark Replacement” means the sum of: (a) the alternate benchmark rate (which may include Term SOFR) that has been selected by the Administrative Agent and the Borrower giving due consideration to (i) any selection or recommendation of a replacement rate or the mechanism for determining such a rate by the Relevant Governmental Body or (ii) any evolving or then-prevailing market convention for determining a rate of interest as a replacement to the LIBOR Rate for U.S. dollar-denominated syndicated credit facilities and (b) the Benchmark Replacement Adjustment; provided that, if the Benchmark Replacement as so determined would

be less than zero, the Benchmark Replacement will be deemed to be zero for the purposes of this Agreement.

“Benchmark Replacement Adjustment” means, with respect to any replacement of the LIBOR Rate with an Unadjusted Benchmark Replacement for each applicable Interest Period, the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or negative value or zero) that has been selected by the Administrative Agent and the Borrower giving due consideration to (i) any selection or recommendation of a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of the LIBOR Rate with the applicable Unadjusted Benchmark Replacement by the Relevant Governmental Body or (ii) any evolving or then-prevailing market convention for determining a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of the LIBOR Rate with the applicable Unadjusted Benchmark Replacement for U.S. dollar- denominated syndicated credit facilities at such time.

“Benchmark Replacement Conforming Changes” means, with respect to any Benchmark Replacement, any technical, administrative or operational changes (including changes to the definition of “Base Rate,” the definition of “Interest Period,” timing and frequency of determining rates and making payments of interest and other administrative matters) that the Administrative Agent decides may be appropriate to reflect the adoption and implementation of such Benchmark Replacement and to permit the administration thereof by the Administrative Agent in a manner substantially consistent with market practice (or, if the Administrative Agent decides that adoption of any portion of such market practice is not administratively feasible or if the Administrative Agent determines that no market practice for the administration of the Benchmark Replacement exists, in such other manner of administration as the Administrative Agent decides is reasonably necessary in connection with the administration of this Agreement).

“Benchmark Replacement Date” means the earlier to occur of the following events with respect to the LIBOR Rate:

(a) in the case of clause (a) or (b) of the definition of “Benchmark Transition Event,” the later of (i) the date of the public statement or publication of information referenced therein and (ii) the date on which the administrator of the LIBOR Rate permanently or indefinitely ceases to provide the LIBOR Rate; or

(b) in the case of clause (c) of the definition of “Benchmark Transition Event,” the date of the public statement or publication of information referenced therein.

“Benchmark Transition Event” means the occurrence of one or more of the following events with respect to the LIBOR Rate:

(a) a public statement or publication of information by or on behalf of the administrator of the LIBOR Rate announcing that such administrator has ceased or will cease to provide the LIBOR Rate, permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the LIBOR Rate;

(b) a public statement or publication of information by the regulatory supervisor for the administrator of the LIBOR Rate, the U.S. Federal Reserve System, an insolvency official with jurisdiction over the administrator for the LIBOR Rate, a resolution authority with jurisdiction over the administrator for the LIBOR Rate or a court or an entity with similar insolvency or resolution authority over the administrator for the LIBOR Rate, which states that the administrator of the LIBOR Rate has ceased or will cease to provide the LIBOR Rate permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the LIBOR Rate; or

(c) a public statement or publication of information by the regulatory supervisor for the administrator of the LIBOR Rate announcing that the LIBOR Rate is no longer representative.

“Benchmark Transition Start Date” means (a) in the case of a Benchmark Transition Event, the earlier of (i) the applicable Benchmark Replacement Date and (ii) if such Benchmark Transition Event is a public statement or publication of information of a prospective event, the 90th day prior to the expected date of such event as of such public statement or publication of information (or if the expected date of such prospective event is fewer than 90 days after such statement or publication, the date of such statement or publication) and (b) in the case of an Early Opt-in Election, the date specified by the Administrative Agent or the Majority Lenders, as applicable, by notice to the Borrower, the Administrative Agent (in the case of such notice by the Majority Lenders) and the Lenders.

“Benchmark Unavailability Period” means, if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred with respect to LIBOR and solely to the extent that LIBOR has not been replaced with a Benchmark Replacement, the period (a) beginning at the time that such Benchmark Replacement Date has occurred if, at such time, no Benchmark Replacement has replaced the LIBOR Rate for all purposes hereunder in accordance with Section 2.8(b) and (b) ending at the time that a Benchmark Replacement has replaced the LIBOR Rate for all purposes hereunder pursuant to Section 2.8(b).

“Beneficial Ownership Certification” means a certification regarding beneficial ownership required by the Beneficial Ownership Regulation.

“Beneficial Ownership Regulation” means 31 C.F.R. § 1010.230.

“Benefit Plan” means any of (a) an “employee benefit plan” (as defined in ERISA) that is subject to Title I of ERISA, (b) a “plan” as defined in Section 4975 of the Code or (c) any Person whose assets include (for purposes of ERISA Section 3(42) or otherwise for purposes of Title I of ERISA or Section 4975 of the Code) the assets of any such “employee benefit plan” or “plan.”

“Board” means the Board of Governors of the Federal Reserve System of the United States.

“Board of Directors” means, as to any person, the board of directors, the board of managers, the sole manager or other governing body of such person or (other than for purposes of the definition of “Change of Control”) any duly appointed committee thereof.

“Borrower” is defined in the introduction to this Agreement.

“Borrowing” means a borrowing consisting of simultaneous Loans from each of the Lenders distributed ratably among the Lenders in accordance with their respective Commitments.

“Business Day” means a day other than a Saturday, Sunday or other day on which commercial banks in New York City are authorized or required by law to close; provided, that with respect to notices and determinations in connection with, and payments of principal and interest on, LIBOR Loans, such day is also a day for trading by and between banks in Dollar deposits in the interbank eurodollar market.

“Capital Stock” means any and all shares, interests, participations or other equivalents (however designated) of capital stock of a corporation, any and all equivalent ownership interests in a Person (other than a corporation) and any and all warrants, rights or options to purchase any of the foregoing.

“Cash Equivalents” means, as at any date, (a) securities issued or directly and fully guaranteed or insured by the United States or any agency or instrumentality thereof (provided that the full faith and credit of the United States is pledged in support thereof) having maturities of not more than 12 months from the date of acquisition, (b) dollar denominated time deposits and certificates of deposit of (i) any Lender, (ii) any domestic commercial bank of recognized standing having capital and surplus in excess of \$500,000,000 or (iii) any bank whose short-term commercial paper rating from S&P is at least A-1 or the equivalent thereof or from Moody’s is at least P-1 or the equivalent thereof (any such bank being an “Approved Bank”), in each case with maturities of not more than 270 days from the date of acquisition, (c) commercial paper and variable or fixed rate notes issued by any Approved Bank (or by the parent company thereof) or any variable rate notes issued by, or guaranteed by, any domestic corporation rated A-1 (or the equivalent thereof) or better by S&P or P-1 (or the equivalent thereof) or better by Moody’s and maturing within six months of the date of acquisition, (d) repurchase agreements entered into by any Person with a bank or trust company (including any of the Lenders) or recognized securities dealer having capital and surplus in excess of \$500,000,000 for direct obligations issued by or fully guaranteed by the United States in which such Person shall have a perfected first priority security interest (subject to no other Liens) and having, on the date of purchase thereof, a Fair Market Value of at least 100% of the amount of the repurchase obligations and (e) investments, classified in accordance with GAAP as current assets, in money market investment programs registered under the Investment Company Act of 1940, as amended, which are administered by reputable financial institutions having capital of at least \$500,000,000 and the portfolios of which are limited to investments of the character described in the foregoing subdivisions (a) through (d).

“Change of Control” is defined in Section 2.23.

“CLO” is defined in Section 10.18(b)(ii).

“Closing Date” means the date on which the conditions set forth in Section 4.1 shall have been satisfied, which date is October 23, 2020.

“CoBank” means CoBank, ACB.

“CoBank Equities” is defined in Section 5.15(a).

“Code” means the Internal Revenue Code of 1986, as amended, together with rules and regulations promulgated thereunder.

“Commitment” means, as to any Lender, the obligation of such Lender to make a Loan on the Closing Date in a principal amount not to exceed the amount set forth under the heading “Commitment” opposite such Lender’s name on Schedule 1.1. The aggregate amount of the Commitments on the Closing Date is \$215,000,000.

“Companies” means, collectively, the Borrower and its Subsidiaries, and “Company” means any of the same.

“Confidential Information” is defined in Section 10.19(b).

“Consolidated EBITDA” means the EBITDA of the Borrower and its Subsidiaries on a consolidated basis.

“Consolidated Net Worth” means, as of the date of determination, the amount of stated capital plus (or minus, in the case of a deficit) the capital surplus and earned surplus of the Companies, as calculated in accordance with GAAP (but treating Minority Interests in Subsidiaries as liabilities and excluding the contra-equity account resulting from the Borrower’s obligations under its employee stock ownership plan commitments). For purposes of this Agreement, Consolidated Net Worth shall exclude the effect of (a) FASB Statements No. 101 (“Regulated Enterprises-Accounting for the Discontinuation of Application of FASB Statement No. 71”) and 106 (“Employers’ Accounting for Postretirement Benefits Other than Pensions”); and (b) as it relates to impairment charges, FASB Statements No. 142 (“Goodwill and Other Intangible Assets”) and 144 (“Accounting for the Impairment or Disposal of Long-Lived Assets”) of the Financial Accounting Standards Board.

“Consolidated Tangible Assets” means, as of the date of determination, Consolidated Total Assets, minus (without duplication) the net book value of all such assets that would be treated as intangible assets, determined on a consolidated basis in accordance with GAAP.

“Consolidated Total Assets” means, as of the date of determination, the total assets of the Borrower and its Subsidiaries, determined on a consolidated basis in accordance with GAAP, as shown on a consolidated balance sheet of the Borrower and its Subsidiaries for the most recently ended calendar quarter for which Financial Statements are available.

“Consolidated Total Funded Debt” means, as of the date of determination, the aggregate principal amount of all Funded Debt of the Borrower and its Subsidiaries at such date, determined on a consolidated basis in accordance with GAAP.

“Credit Party” means the Administrative Agent or any other Lender.

“Current Date” means any date after September 30, 2020.

“Current Financials” means the consolidated Financial Statements of the Companies for the fiscal year ended December 31, 2019.

“Debt” means (without duplication), for any Person, all obligations, contingent or otherwise (including, without limitation, contingent obligations in connection with letters of credit), which in accordance with GAAP should be classified upon such Person’s balance sheet as liabilities, but in any event including, without limitation, whether or not such obligations in accordance with GAAP should be classified as liabilities, (a) liabilities secured (or for which the holder of such Debt has an existing Right, contingent or otherwise, to be so secured) by any Lien existing on property owned or acquired by such Person or a Subsidiary thereof (whether or not the liability secured thereby shall have been assumed), (b) obligations which have been or under GAAP should be capitalized for financial reporting purposes, (c) all guaranties, endorsements, and other contingent obligations with respect to Debt of others, including, but not limited to, any obligations to purchase, sell, or furnish property or services intended by a Company primarily for the purpose of enabling such other Person to make payment of any of such Person’s Debt, or to otherwise assure the holder of any of such Debt against loss with respect thereto, and (d) liabilities under any Swap Agreement; provided that a Person’s liabilities under any ISDA Swap Agreement with a particular counterparty shall be calculated on a net basis.

“Debt Rating” means the public debt rating by S&P and Moody’s for that class of non-credit enhanced, senior unsecured debt with an original term of longer than one year issued by the Borrower which has the lowest rating of all classes of non-credit enhanced, senior unsecured debt with an original term of longer than one year issued by the Borrower.

“Debtor Relief Laws” means the Bankruptcy Code of the United States of America and all other applicable liquidation, conservatorship, bankruptcy, moratorium, rearrangement, receivership, insolvency, reorganization, fraudulent transfer or conveyance, suspension of payments, or similar Laws from time to time in effect affecting the Rights of creditors generally.

“Default” means the occurrence of any event which with the giving of notice or the passage of time or both would become an Event of Default.

“Defaulting Lender” means any Lender that (a) has failed, within two Business Days of the date required to be funded or paid, to pay over to any Credit Party any amount required to be paid by it hereunder, or (b) has become the subject of a Bankruptcy Event.

“Dispose” or “Disposed of” means to convey, sell, lease, sell and lease-back, assign, transfer or otherwise dispose of any property, business or asset. The term “Disposition” shall have a correlative meaning to the foregoing.

“Dollars” means dollars in lawful currency of the United States.

“Domestic Person” means any Person organized under the laws of any jurisdiction within the United States.

“Domestic Subsidiary” means any Subsidiary of the Borrower organized under the laws of any jurisdiction within the United States.

“Early Opt-in Election” means the occurrence of:

(a) (i) a determination by the Administrative Agent or (ii) a notification by the Majority Lenders to the Administrative Agent (with a copy to the Borrower) that the Majority Lenders have determined that U.S. dollar-denominated syndicated credit facilities being executed at such time, or that include language similar to that contained in Section 2.8(b), are being executed or amended, as applicable, to incorporate or adopt a new benchmark interest rate to replace the LIBOR Rate, and

(b) (i) the election by the Administrative Agent or (ii) the election by the Majority Lenders to declare that an Early Opt-in Election has occurred and the provision, as applicable, by the Administrative Agent of written notice of such election to the Borrower and the Lenders or by the Majority Lenders of written notice of such election to the Administrative Agent.

“EBITDA” means for any period and for any Person (the “Test Person”), (1) consolidated net income of such Test Person and its consolidated Subsidiaries for such period adjusted to exclude (or in case of clause (1) below include) the effect of (a) any non-cash losses resulting from requirements to mark-to-market Swap Agreements, foreign exchange transactions or other transactions executed pursuant to an ISDA master agreement, (b) expense items resulting from Lumen’s acquisition of Borrower, including severance, retention and integration costs and change of control payments, any gains or losses in connection with the repurchase or retirement of Debt, (c) any loss reflected in such net income all or any portion of which is reasonably expected to be paid or reimbursed by an insurer, indemnitor or other third party source, provided that, to the extent that the claim for all or any portion of any such reasonably expected payment or reimbursement is not accepted by the applicable insurer, indemnitor or other third party source within 180 days of the loss event, there shall be a corresponding deduction from EBITDA; and provided further, that recognition or receipt of all or any portion of any such reasonably expected payment or reimbursement from the applicable insurer, indemnitor or other third party source shall be deducted from EBITDA to the extent reflected in net income, (d) any non-cash losses as a result of (i) impairment of goodwill under Statement of Financial Accounting Standards No. 142, (ii) an impairment of fixed assets under Statement of Financial Accounting Standards No. 144, (iii) any amortization of intangibles pursuant to Statement of Financial Accounting Standards No. 141, or (iv) the implementation of any future modifications to the accounting

standards employed by such Test Person and its consolidated Subsidiaries, including any costs or charges associated with leases that are not characterized as “capital leases” under GAAP, (e) gains or losses resulting from activity of any unconsolidated Persons provided that EBITDA shall be increased by cash distributed by and reduced by money invested in such unconsolidated Person, (f) gains or losses from marking to market portfolio assets until recognized for income tax purposes, (g) without duplication of any other exclusions in this definition of EBITDA, any extraordinary or other non-recurring non-cash income, expenses, gain or loss, provided that any cash payments received or made as result of such gain or loss (regardless of when the gain or loss was incurred) shall be included in the calculation of EBITDA for the period in which they are received or made (unless previously included for purposes of this calculation), (h) any gain or loss on the disposition of investments, (i) income (or loss) for such period of any Person, or attributable to any assets, disposed of during such period determined on a pro forma basis as though such Person or assets had been disposed of on the first day of such period) and (j) income (or loss) for such period of any Person that became a Subsidiary of such Test Person during such period or attributable to any assets acquired during such period, in each case, determined on a pro forma basis as though such Person or such assets were acquired on the first day of such period, plus, to the extent deducted in determining such adjusted net income, the aggregate amount of (2) interest expense, excluding the amortization or write-off of Debt discount or premiums and Debt issuance costs and commissions, discounts and other fees and charges associated with Debt (including, if applicable, Loans), (3) income tax expense, (4) depreciation and amortization and (5) any non-cash charges to net income relating to the establishment of reserves and any income relating to the release of such reserves, provided that EBITDA shall be reduced by any cash expended that reduces the amount of any reserve.

“Eligible Reinvestment” means (a) any acquisition (whether or not constituting a capital expenditure, but not constituting an Acquisition) of assets or any business (or any part thereof) used or useful in a Permitted Line of Business and (b) any Acquisition.

“Environmental Law” means any Law that relates to the environment or handling or control of Hazardous Substances.

“ERISA” means the Employee Retirement Income Security Act of 1974, as the same may be amended from time to time and any final regulations promulgated and the rulings issued thereunder.

“ERISA Affiliate” means any trade or business (whether or not incorporated) that, together with any Company, is treated as a single employer under Section 414(b) or (c) of the Code, or, solely for purposes of Section 302 of ERISA and Section 412 of the Code, is treated as a single employer under Section 414 of the Code.

“ERISA Event” shall mean (a) any Reportable Event or the requirements of Section 4043(b) of ERISA apply with respect to a Plan; (b) with respect to any Plan, the failure to satisfy the minimum funding standard under Section 412 of the Code or Section 302 of ERISA, whether or not waived; (c) a determination that any Plan is, or is expected to be, in “at-risk” status (as defined in Section 303(i)(4) of ERISA or Section 430(i)(4) of the Code); (d) the filing pursuant to Section 412(c) of the Code or Section 302(c) of ERISA of an application for a

waiver of the minimum funding standard with respect to any Plan, the failure to make by its due date a required installment under Section 430(j) of the Code with respect to any Plan or the failure to make by its due date any required contribution to a Multiemployer Plan; (e) the incurrence by the Borrower, a Subsidiary or any ERISA Affiliate of any liability under Title IV of ERISA with respect to the termination of any Plan or Multiemployer Plan; (f) the receipt by any Company or any ERISA Affiliate from the PBGC or a plan administrator of any notice relating to an intention to terminate any Plan or to appoint a trustee to administer any Plan under Section 4042 of ERISA; (g) the incurrence by any Company or any ERISA Affiliate of any liability with respect to the withdrawal or partial withdrawal from any Plan or Multiemployer Plan; (h) the receipt by any Company or any ERISA Affiliate of any notice, or the receipt by any Multiemployer Plan from any Company or any ERISA Affiliate of any notice, concerning the impending imposition of Withdrawal Liability or a determination that a Multiemployer Plan is, or is expected to be, insolvent or in reorganization, within the meaning of Title IV of ERISA, or in “endangered” or “critical” status, within the meaning of Section 432 of the Code or Section 305 of ERISA; (i) the conditions for imposition of a lien under Section 303(k) of ERISA shall have been met with respect to any Plan; or (j) the withdrawal of any of any Company or any ERISA Affiliate from a Plan subject to Section 4063 of ERISA during a plan year in which such entity was a “substantial employer” as defined in Section 4001(a)(2) of ERISA or a cessation of operations that is treated as such a withdrawal under Section 4062(e) of ERISA.

“Eurocurrency Reserve Requirements” means, for any day as applied to a LIBOR Loan, the aggregate (without duplication) of the maximum rates (expressed as a decimal fraction) of reserve requirements in effect on such day (including basic, supplemental, marginal and emergency reserves) under any regulations of the Board or other Tribunal having jurisdiction with respect thereto dealing with reserve requirements prescribed for eurocurrency funding (currently referred to as “Eurocurrency Liabilities” in Regulation D) maintained by a member bank of the Federal Reserve System.

“Eurodollar Tranche” means the collective reference to LIBOR Loans the then current Interest Periods with respect to all of which begin on the same date and end on the same later date (whether or not such Loans shall originally have been made on the same day).

“Event of Default” means any of the events described in Section 7; provided, that there has been satisfied any requirement in connection therewith for the giving of notice, lapse of time, or happening of any further condition, event, or act.

“Existing Loan Papers” means the “Loan Papers” as defined in the Prior Credit Agreement.

“Exchange Act” means Section 13(d)(3) of the Securities Exchange Act of 1934.

“Excluded Regulated Subsidiary” means any regulated Subsidiary as to which the guaranteeing by such Subsidiary of the Obligations of the Borrower would, in the good faith judgment of the Borrower, result in adverse regulatory consequences to such Subsidiary, be prohibited without regulatory approval or impair the conduct of the business of such Subsidiary.

“Excluded Specified Debt” means (i) Debt (including any Permitted Refinancing Debt), whether secured or unsecured, of an Excluded Specified Subsidiary that exists at the time such entity is acquired and is not incurred in contemplation of such acquisition, to the extent that either: (1) the total consideration (excluding assumed Debt of the Excluded Specified Subsidiary and its Subsidiaries but including Debt incurred by the Borrower or any Guarantor in connection with the acquisition) paid by Borrower for the acquisition of the Excluded Specified Subsidiary and its Subsidiaries consists of at least 80% of Borrower Capital Stock, (2) the Capital Stock of the Excluded Specified Subsidiary is owned by Borrower or any Guarantor and (3) after giving effect to the acquisition of such Excluded Specified Subsidiary, the Borrower shall be in compliance, on a pro forma basis, with the covenants set forth in Section 6.14.

“Excluded Specified Subsidiary” means any Subsidiary (including its Subsidiaries) (a) that is acquired after the Closing Date, (b) that is prohibited from entering into the Guarantee Agreement due to restrictions contained in documentation governing the Debt of such Subsidiary (to the extent such documentation was not entered into in contemplation of such acquisition) or for which entrance into the Guarantee Agreement would create a default under the documentation governing the Debt of such Subsidiary and (c) that has Debt in excess of \$25,000,000 incurred under such documentation that cannot be prepaid without penalty.

“Excluded Swap Obligation” means, with respect to any Guarantor, any Swap Obligation if, and to the extent that, all or a portion of the Guarantee of such Guarantor of, or the grant by such Guarantor of a security interest to secure, such Swap Obligation (or any Guarantee thereof) is or becomes illegal under the Commodity Exchange Act or any rule, regulation or order of the Commodity Futures Trading Commission (or the application or official interpretation of any thereof) by virtue of (a) such Guarantor’s failure for any reason to constitute an “eligible contract participant” as defined in the Commodity Exchange Act and the regulations thereunder or (b) in the case of a Swap Obligation subject to a clearing requirement pursuant to Section 2(h) of the Commodity Exchange Act (or any successor provision thereto), because such Guarantor is a “financial entity,” as defined in Section 2(h)(7)(C)(i) of the Commodity Exchange Act (or any successor provision thereto), in each case at the time the Guarantee of such Guarantor or the grant of such security interest becomes effective with respect to such Swap Obligation, unless otherwise agreed between the Administrative Agent and the Borrower. If a Swap Obligation arises under a master agreement governing more than one swap, such exclusion shall apply only to the portion of such Swap Obligation that is attributable to swaps for which such Guarantee or security interest is or becomes illegal.

“Extension” is defined in Section 2.22(a).

“Exiting Lender” is defined in Section 2.23.

“Extended Loan” is defined in Section 2.22(a)(ii).

“Extension Offer” is defined in Section 2.22(a).

“Farm Credit Lender” means a lending institution organized and existing pursuant to the provisions of the Farm Credit Act of 1971 and under the regulation of the Farm Credit Administration.

“Fair Market Value” means, with respect to any asset or property, the price that could be negotiated in an arms’-length transaction between a willing seller and a willing buyer, neither of whom is under undue pressure or compulsion to complete the transaction (as determined in good faith by the Board of Directors of the Borrower, including through their reliance on the most recent real property tax bill or assessment in the case of Real Property).

“FATCA” means Sections 1471 through 1474 of the Code, as of the Closing Date (or any amended or successor version that is substantially comparable and not materially more onerous to comply with) and any current or future regulations or official interpretations thereof.

“Federal Funds Effective Rate” means, for any day, the weighted average of the rates on overnight federal funds transactions with members of the Federal Reserve System arranged by federal funds brokers, as published on the next succeeding Business Day by the Federal Reserve Bank of New York, or, if such rate is not so published for any day that is a Business Day, the average of the quotations for the day of such transactions received by the Administrative Agent from three federal funds brokers of recognized standing selected by it.

“Financial Officer” means the chief financial officer, treasurer or controller of the Borrower.

“Financial Report Certificate” means a certificate substantially in the form of Exhibit C.

“Financial Statements” means balance sheets, income statements, statements of stockholders’ equity, and statements of cash flow prepared in comparative form to the corresponding period of the preceding fiscal year, in each case for (a) the Borrower and its Subsidiaries on a consolidated basis and (b) the Borrower and its Subsidiaries and Unrestricted Subsidiaries on a consolidated basis.

“Fitch” means Fitch Ratings, Inc.

“Foreign Subsidiary” means any Subsidiary that is incorporated or organized under the laws of any jurisdiction other than the United States of America, any state thereof or the District of Columbia.

“Funded Debt” with respect to any Person, means and includes, as of any date as of which the amount thereof is to be determined, (a) indebtedness of such Person for borrowed money, (b) all obligations of such Person for the deferred purchase price of property or services (other than current trade payables incurred in the ordinary course of such Person’s business), (c) all obligations of such Person evidenced by notes, bonds, debentures or other similar instruments, (d) all indebtedness created or arising under any conditional sale or other title retention agreement with respect to property acquired by such Person (even though the rights and remedies of the seller or lender under such agreement in the event of default are limited to

repossession or sale of such property), (e) liabilities secured (or for which the holder thereof has an existing Right, contingent or otherwise, to be so secured) by any Lien existing on property owned or acquired by such Person or a Subsidiary thereof (whether or not the liability secured thereby shall have been assumed), excluding any Lien on equity interests of an Unrestricted Subsidiary or joint venture securing obligations of such Unrestricted Subsidiary or joint venture and its subsidiaries, (f) obligations of such Person which have been or under GAAP should be capitalized for financial reporting purposes, and (g) Attributable Debt of such Person, but excluding indebtedness secured by or borrowed against the cash surrender value of life insurance policies up to the amount of such cash surrender value.

“Funding Office” means the office of the Administrative Agent specified in Section 10.6 or such other office as may be specified from time to time by the Administrative Agent as its funding office by written notice to the Borrower and the Lenders.

“GAAP” means generally accepted accounting principles of the Accounting Principles Board of the American Institute of Certified Public Accountants and the Financial Accounting Standards Board which are applicable as of the date of the Financial Statements in question.

“Guarantee Agreement” means the Guarantee Agreement, substantially in the form of Exhibit E.

“Guarantors” means any Subsidiary that (i) is required to enter into a Guarantee Agreement pursuant to Section 5.13 or (ii) otherwise enters into a Guarantee Agreement under Section 5.13.

“Guarantor Significant Subsidiary” means at all times after the first date after the Closing Date that the Borrower obtains a Below Investment Grade Rating, the term “Guarantor Significant Subsidiary” shall mean a Subsidiary of the Borrower (x) the assets of which are equal to or greater than 15% of Consolidated Total Assets (other than assets of any Excluded Specified Subsidiaries) as of the last date of the most recent fiscal quarter for which financial statements are available, (y) the operating revenue of which, for the year to date through the most recent fiscal quarter for which financial statements are made available, is equal to or greater than 15% of the operating revenues of the Borrower and its Subsidiaries (other than Excluded Specified Subsidiaries) for such period, or (z) the net income from recurring operations (excluding any extraordinary or other non-recurring income, expenses, gain or loss) of which, for the year to date through the most recent fiscal quarter for which financial statements are available, is equal to or greater than 15% of the net income from recurring operations (excluding any extraordinary or other non-recurring income, expenses, gain or loss) of the Borrower and its Subsidiaries (other than Excluded Specified Subsidiaries) for such period; provided, however, that, if any agreement governing any other senior unsecured debt provides for a percentage threshold lower than 15%, then the percentage threshold set forth in this definition shall be decreased accordingly to equal such lower percentage threshold.

“Guaranty” means by any particular Person, all obligations of such Person guaranteeing or in effect guaranteeing any Debt, dividend or other obligation of any other Person (the “primary obligor”) in any manner whether directly or indirectly, including, without limitation of

the generality of the foregoing, obligations incurred through an agreement, contingent or otherwise, by such particular Person (a) to purchase such Debt or obligation or any property constituting security therefor, (b) to advance or supply funds (i) for the purchase or payment of such Debt or obligation or (ii) to maintain working capital or equity capital or otherwise to advance or make available funds for the purchase or payment of such Debt or obligation, (c) to purchase property, securities or services primarily for the purpose of assuring the owner of such Debt or obligation of the ability of the primary obligor to make payment of the Debt or obligation or (d) otherwise to assure the owner of the Debt or obligation of the primary obligor against loss in respect thereof. Notwithstanding the foregoing, any Guaranty with respect to any Guarantor delivering a Guarantee Agreement shall not include the Excluded Swap Obligations.

“Hazardous Substance” means any hazardous or toxic waste, pollutant, contaminant, or substance.

“Indemnified Liabilities” is defined in Section 10.24.

“Indemnified Parties” is defined in Section 10.24.

“Initial Interest Period” means the initial Interest Period following the Closing Date which shall be for a period commencing on October 23, 2020 and ending on October 30, 2020.

“Insolvent” means, with respect to any Multiemployer Plan, the condition that such plan is insolvent within the meaning of section 4245 of ERISA.

“Interest Payment Date” means (a) as to any Base Rate Loan, the last day of each March, June, September and December to occur while such Loan is outstanding and the final maturity date of such Loan, (b) as to any LIBOR Loan having an Interest Period of three months or less, the last day of such Interest Period, (c) as to any LIBOR Loan having an Interest Period longer than three months, each day that is three months, or a whole multiple thereof, after the first day of such Interest Period and the last day of such Interest Period, (d) as to any Loan (other than any Loan that is a Base Rate Loan), the date of any repayment or optional prepayment made in respect thereof and (e) as to any Loan, the date of any mandatory prepayment in respect thereof.

“Interest Period” means, as to any LIBOR Loan, (i) to the extent applicable, the Initial Interest Period, or (ii) (a) initially, the period commencing on the borrowing or conversion date, as the case may be, with respect to such LIBOR Loan and ending one, two, three or six months (or twelve months if agreed to by all Lenders) thereafter, as selected by the Borrower in its notice of borrowing or notice of conversion, as the case may be, given with respect thereto; and (b) thereafter, each period commencing on the last day of the next preceding Interest Period applicable to such LIBOR Loan and ending one, two, three or six months (or twelve months if agreed to by all Lenders) thereafter, as selected by the Borrower by irrevocable notice to the Administrative Agent not later than 11:00 A.M., New York City time, on the date that is three Business Days prior to the last day of the then current Interest Period with respect thereto; provided, that all of the foregoing provisions relating to Interest Periods are subject to the following:

(i) if any Interest Period would otherwise end on a day that is not a Business Day, such Interest Period shall be extended to the next succeeding Business Day unless the result of such extension would be to carry such Interest Period into another calendar month in which event such Interest Period shall end on the immediately preceding Business Day;

(ii) the Borrower may not select an Interest Period that would extend beyond the Termination Date unless the Borrower acknowledges that it will be responsible for any breakage costs owing under Section 2.12 resulting from repayment on the Termination Date;

(iii) any Interest Period that begins on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the calendar month at the end of such Interest Period) shall end on the last Business Day (if a calendar month; and

(iv) subject to clause (ii) above, the Borrower shall select Interest Periods so as not to require a payment or prepayment of any LIBOR Loan during an Interest Period for such Loan.

“Investments” is defined in Section 6.5.

“Laws” means all applicable statutes, laws, treaties, ordinances, rules, regulations, orders, writs, injunctions, decrees, judgments, or opinions of any Tribunal.

“Lead Arranger” means CoBank, ACB.

“Lenders” means those lenders signatory hereto and other financial institutions which from time to time become party hereto pursuant to the provisions of this Agreement.

“LIBOR” means, with respect to each day during each Interest Period pertaining to a LIBOR Loan, the rate per annum determined by the ICE Benchmark Administration (or any successor that takes over the administration of such rate) on the basis of the rate for deposits in Dollars for a period equal to such Interest Period appearing in Bloomberg Professional Services (or any successor page) as the London Interbank offered rate as of 11:00 A.M., London time, two Business Days prior to the beginning of such Interest Period; provided, that if such rate shall be less than zero, such rate shall be deemed to be zero for purposes of this Agreement. In the event that such rate does not appear on such page (or otherwise on such screen), “LIBOR” shall be determined by reference to such other comparable publicly available service for displaying eurodollar rates as may be selected by the Administrative Agent or, in the absence of such availability, by reference to the rate at which the Administrative Agent is offered Dollar deposits at or about 11:00 A.M., New York City time, two Business Days prior to the beginning of such Interest Period in the interbank eurodollar market where its eurodollar and foreign currency and exchange operations are being conducted for delivery on the first day of such Interest Period for the number of days comprised therein; provided, that if such rate shall be less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

“LIBOR Loan” means any Loan the rate of interest applicable to which is based upon the LIBOR Rate, other than any Base Rate Loan.

“LIBOR Rate” means, with respect to each day during each Interest Period pertaining to a LIBOR Loan, a rate per annum determined for such day in accordance with the following formula (rounded upward to the nearest 1/100th of 1%)

LIBOR

1.00- Eurocurrency Reserve Requirements

“Lien” or “Liens” means any lien, mortgage, security interest, pledge, assignment, charge, title, retention agreement, or encumbrance of any kind, and any other Right of or arrangement with any creditor to have his claim satisfied out of any property, or the proceeds therefrom, prior to the general creditors of the owners thereof.

“Litigation” means any action conducted, pending, or threatened by or before any Tribunal.

“Loan” or “Loans” is defined in Section 2.1.

“Loan Papers” means (i) this Agreement, certificates delivered pursuant to this Agreement, and exhibits and schedules hereto, (ii) any notes, security documents, guaranties, and other agreements in favor of the Administrative Agent and the Lenders, or any or some of them, ever delivered in connection with this Agreement, including the Guarantee Agreement, and (iii) all renewals, extensions, or restatements of, or amendments or supplements to, any of the foregoing.

“Loan Parties” means each Company that is a party to a Loan Paper.

“Lumen” means CenturyLink, Inc. (d/b/a Lumen Technologies), a Louisiana corporation.

“Majority Lenders” means at any time the Lenders and Voting Participants holding or participating in more than 50% of the aggregate unpaid principal amount of the Loans then outstanding.

“Margin Stock” means “margin stock” within the meaning of Regulations T, U, or X.

“Material Adverse Effect” means any set of one or more circumstances or events which, individually or collectively, will result in any of the following: (a) a material and adverse effect upon the validity or enforceability of any Loan Paper, (b) a material and adverse effect on the consolidated financial condition of the Companies represented in the later of the Current Financials or the most recent audited consolidated Financial Statements, (c) a Default or (d) the issuance of an accountant’s report on the Companies’ consolidated Financial Statements containing an explanatory paragraph about the entity’s ability to continue as a going concern (as defined in accordance with Generally Accepted Auditing Standards).

“Material Agreement” of any Person means any material written or oral agreement, contract, commitment, or understanding to which such Person is a party, by which such Person is directly or indirectly bound, or to which any assets of such Person may be subject, and which is not cancelable by such Person upon 30 days or less notice without liability for further payment other than nominal penalty, and which requires such Person to pay more than the greater of \$250,000,000 or 1% of Consolidated Net Worth during any 12-month period. For the avoidance of doubt, the agreements constituting Excluded Specified Debt will be considered “Material Agreements” for purposes of this Agreement.

“Minimum Extension Condition” is defined in Section 2.22(b).

“Minority Interest” means, with respect to any Subsidiary, an amount determined by valuing preferred stock held by Persons other than the Borrower and its Wholly Owned Subsidiaries at the voluntary or involuntary liquidating value of such preferred stock, whichever is greater, and by valuing common stock or partnership interests held by Persons other than the Borrower and its Wholly Owned Subsidiaries at the book value of capital and surplus applicable thereto on the books of such Subsidiary adjusted, if necessary, to reflect any changes from the book value of common stock required by the foregoing method of valuing Minority Interest attributable to preferred stock.

“MTE Transaction” means any transaction where the MTE Subsidiary acquires equipment, rights or other assets for the purpose of leasing or licensing such equipment or other assets as well as any leases or license of any of its equipment, rights or other assets to Lumen or Lumen’s direct or indirect subsidiaries.

“MTE Subsidiary” means an entity organized or existing under the laws of the United States, any state thereof or the District of Columbia that is a direct or indirect subsidiary of Lumen for the purpose of leasing or licensing equipment, rights or other assets to Lumen or Lumen’s direct or indirect subsidiaries.

“Moody’s” means Moody’s Investors Service, Inc.

“Multiemployer Plan” means a multiemployer plan as defined in Section 4001(a)(3) of ERISA to which any Company or any ERISA Affiliate (other than one considered an ERISA Affiliate only pursuant to subsection (m) or (o) of Code Section 414) is making or accruing an obligation to make contributions, or has within any of the preceding six plan years made or accrued an obligation to make contributions.

“Net Cash Proceeds” means the aggregate cash or Cash Equivalents proceeds received by the Company in respect of any disposition of assets, as contemplated by Section 6.7(h), net of (a) direct costs (including, without limitation, legal, accounting and investment banking fees, and sales commissions); (b) Taxes paid or payable as a result thereof; (c) the amount necessary to retire any Debt secured by a Permitted Lien on the related property (unless the purchaser of the assets has assumed the obligations to repay such Debt); (d) with respect to a Subsidiary that is not a Wholly Owned Subsidiary, that portion of such proceeds allocable to the Minority Interests; and (e) the amount of any reserves established by the Borrower and its Subsidiaries to

fund contingent liabilities reasonably estimated to be payable and the amount of capital and operating expenditures that would not otherwise have been incurred and are required in writing or by application of policy by a public utility commission to be incurred as a condition to its consent, in each case during the year that such event occurred or the next succeeding year and that are directly attributable to such event (as determined reasonably and in good faith by a Financial Officer (or any such officer's designee, designated in writing by such officer) of the Borrower); it being understood that "Net Cash Proceeds" shall include, without limitation, any cash or Cash Equivalents received upon the sale or other disposition of any non-cash consideration received by any such Company in any disposition of assets.

"Non-Excluded Taxes" is defined in Section 2.19(a).

"Non-Exiting Lender" is defined in Section 2.23.

"Non-U.S. Lender" is defined in Section 2.19(d).

"Note" means a promissory note of the Borrower, in substantially the form of Exhibit A hereto, with the blanks appropriately completed, evidencing the aggregate indebtedness of the Borrower to such Lender resulting from the Loans made by such Lender to the Borrower, together with all modifications, extensions, renewals, and rearrangements thereof.

"Obligation" means all present and future indebtedness, obligations, and liabilities, and all renewals, extensions, and modifications thereof, owed to the Administrative Agent and the Lenders, or any or some of them, by the Borrower, arising pursuant to any Loan Paper, together with all interest thereon and costs, expenses, and attorneys' fees incurred in the enforcement or collection thereof.

"Optional Termination Date" is defined in Section 2.23.

"Other Taxes" means any and all present or future stamp or documentary taxes or any other excise or property taxes, charges or similar levies arising from any payment made hereunder or from the execution, delivery or enforcement of, or otherwise with respect to, this Agreement or any other Loan Paper including any interest, additions to tax or penalties applicable thereto, but excluding the Taxes described in clause (i) and clause (ii) of Section 2.19(a).

"Parent" means, with respect to any Lender, any Person as to which such Lender is, directly or indirectly, a subsidiary.

"Participant" is defined in Section 10.18(c).

"Participant Register" is defined in Section 10.18(c).

"Patriot Act" is defined in Section 10.20.

"PBGC" means the Pension Benefit Guaranty Corporation, or any successor thereof, established pursuant to ERISA.

“Permitted Liens” means:

- (a) any Lien as of the Closing Date;
- (b) any Lien existing on any asset prior to the acquisition thereof by the Borrower or a Subsidiary (to the extent the acquisition is permitted by this Agreement), so long as such Lien was not incurred in contemplation of such acquisition;
- (c) any Lien securing Debt incurred for the purchase or capital lease of one or more assets (if such Lien encumbers only the assets so purchased or leased);
- (d) pledges or deposits made to secure payment of workers’ compensation, or to participate in any fund in connection with workers’ compensation, unemployment insurance, pensions, or other social security programs;
- (e) Liens or good-faith pledges or deposits made to secure performance of bids, tenders, contracts (other than for the repayment of borrowed money), or leases, or to secure statutory obligations, surety or appeal bonds, or indemnity, performance, or similar bonds, government contracts or other similar obligations in the ordinary course of business;
- (f) easements, rights-of-way, zoning restrictions and other similar charges, encumbrances and restrictions in respect of Real Property or immaterial imperfections of title which do not, in the aggregate, materially impair the ordinary conduct of the Borrower and its Subsidiaries, taken as a whole;
- (g) (i) Liens for Taxes, (ii) Liens upon, and defects of title to, property, including any attachment of property or other legal process prior to adjudication of a dispute on the merits, (iii) Liens of mechanics, materialmen, warehousemen, carriers, and landlords, and similar Liens, and (iv) adverse judgments on appeal, in each case, with respect to this clause (g), if either (x) no amounts are due and payable and no Lien has been filed or agreed to or (y) the validity or amount thereof is being contested in good faith by lawful proceedings diligently conducted, reserve or other provision required by GAAP has been made, levy and execution thereon have been (and continue to be) stayed, and neither the value nor use of the property in question are materially affected;
- (h) Liens in favor of the United States Department of Agriculture, the Rural Electrification Administration, the Rural Utilities Service, the Rural Telephone Bank or similar lenders such as the Rural Telephone Finance Cooperative;
- (i) Liens on equity investments in a financial institution which requires any Company to make an equity investment in such institution in order to borrow money;
- (j) Liens existing on any property of a Subsidiary existing at the time it became a Subsidiary which were not created with view of becoming a Subsidiary, provided that the Debt secured by such Liens may not be increased, extended, renewed or continued beyond its

original stated maturity if such increase, extension or renewal would result in a Default under Section 6.14;

(k) Liens either on shares of stock or other equity interests of an entity which, when such Liens arise, concurrently becomes a Subsidiary or on assets of an entity arising in connection with acquisition thereof by the Borrower or a Subsidiary; provided, that the Debt secured by such Liens may not be increased or extended, renewed or continued beyond its original stated maturity if such increase, extension or renewal would result in a Default under Section 6.14;

(l) Liens securing reimbursement obligations with respect to commercial letters of credit which encumber documents and other assets relating to such letters of credit and products and proceeds thereof;

(m) Liens encumbering deposits made to secure obligations arising from statutory, regulatory, contractual or warranty requirements of the Borrower or any Subsidiary, including rights of offset and setoff;

(n) bankers' Liens, rights of setoff and other similar Liens existing solely with respect to cash and Cash Equivalents on deposit in one or more of accounts maintained by the Borrower or any Subsidiary, in each case granted in the ordinary course of business in favor of the bank or banks with which such accounts are maintained, securing amounts owing to such bank or banks with respect to cash management and operating account arrangements, including those involving pooled accounts and netting arrangements; provided, that in no case shall any such Liens secure (either directly or indirectly) the repayment of any Debt;

(o) leases or subleases and licenses and sublicenses (including with respect to any fixtures, furnishings, equipment, vehicles or other personal property, or intellectual property) granted to others that do not materially interfere with the ordinary course of business of the Borrower or any Subsidiary;

(p) Liens arising from filing Uniform Commercial Code financing statements regarding leases;

(q) Liens on Capital Stock owned by the Borrower or any Restricted Subsidiary in an Unrestricted Subsidiary or a Person that is not a Subsidiary to secure Debt or other obligations of the Unrestricted Subsidiary or Person that issued the Capital Stock;

(r) Liens on property of a Subsidiary (other than on stock of a Subsidiary except to the extent permitted in clause (k) above) securing obligations owing to the Borrower or a Wholly Owned Subsidiary;

(s) except as otherwise prohibited by clause (j) or (k) above, Liens securing extensions, renewals or refinancings of the Debt to replace Liens being released in connection with such transaction to the extent the Liens being released were permitted hereunder;

(t) Liens on accounts receivable and related assets (including without limitation, all collateral, guaranties and contracts associated with such accounts receivable, all of the Receivables Entity's interest in inventory and goods the sale of which gave rise to the accounts receivable, all lockbox or collection accounts related thereto, all records related thereto and all proceeds of the foregoing) securing indebtedness incurred pursuant to a Qualified Receivables Transaction;

(u) Liens on assets subject to any sale and leaseback transaction consummated pursuant to Section 6.7(g);

(v) (X) Liens arising in the ordinary course of business which (i) do not secure Funded Debt, (ii) do not in the aggregate materially detract from the value of the grantor's assets or materially impair the use thereof in the operation of its business, and (iii) do not secure obligations in an amount exceeding, in the aggregate, \$100,000,000; and (Y) Liens not described in clause (X) on cash and Cash Equivalents and securities which Liens secure any obligation with respect to letters of credit and which do not secure obligations in an amount exceeding, in the aggregate, \$100,000,000;

(w) any Lien on any asset of any Person existing at the time such Person is merged or consolidated with or into the Borrower or a Subsidiary (to the extent any such merger or consolidation is permitted under Section 6.4 and not created in contemplation of such event);

(x) Liens securing Debt permitted to be secured by a Lien in accordance with Section 6.15;

(y) Liens on property of a Subsidiary securing indebtedness of such Subsidiary created, assumed or incurred after the date hereof, the creation, assumption or incurrence of which would not create a Default under Section 6.14;

(z) Liens on securities in connection with securities repurchase and reverse repurchase arrangements that bear only upon the securities involved in the repurchase or reverse repurchase transaction;

(aa) replacements, extension and renewals of any Lien permitted by clause (b), (c), (j) or (k) above upon or in the same property theretofore subject thereto or the replacement, extension or renewal (without increase in the amount or change in any direct or contingent obligor) of the Debt secured thereby);

(bb) Liens securing Funded Debt referred to in clause (g) of the definition of Permitted Priority Debt;

(cc) Liens on assets of an Excluded Specified Subsidiary securing the Excluded Specified Debt of such Excluded Specified Subsidiary;

(dd) any Lien created under the Loan Papers and statutory Liens described in Section 5.15(c);

(dd) Liens in favor of customs and revenue authorities arising as a matter of law to secure payment of customs duties in connection with the importation of goods;

(ee) Liens on any amounts held by a trustee under any indenture or other debt agreement issued in escrow pursuant to customary escrow arrangements pending the release thereof, or under any indenture or other debt agreement pursuant to customary discharge, redemption or defeasance provisions

(ff) Liens solely on any cash earnest money deposits made by the Borrower or any Subsidiary in connection with any letter of intent or purchase agreement in respect of any Investment permitted hereunder;

(gg) Liens securing insurance premiums financing arrangements; provided that such liens are limited to the applicable unearned insurance premiums; and

(hh) Liens secured in the ordinary course of business, including (i) any interest or title of a ground lessor or any other lessor, sublessor or licensor under any ground leases or any other leases, subleases or licenses entered into by the Borrower or any Subsidiary, and all Liens suffered or created by any such ground lessor or any other lessor, sublessor or licensor (in each case, to the extent not duplicative of clause o above) with respect to any such interest or title in the Real Property which is subject thereof, (ii) agreements to subordinate any interest of the Borrower or any Subsidiary in any accounts receivable or other proceeds arising from inventory consigned by the Borrower or any of their Subsidiaries, (iii) Liens on goods or inventory the purchase, shipment or storage price of which is financed by a documentary letter of credit or bank guarantee issued or created for the account of the Borrower or any Subsidiary; provided, that such Lien secures only the obligations of the Borrower or such Subsidiaries in respect of such letter of credit, bank guarantee or banker's acceptance, and (iv) Liens arising out of conditional sale, title retention or similar arrangements for the sale or purchase of goods by the Borrower or any of the Subsidiaries.

"Permitted Line of Business" means a line of business in which the Borrower and the Subsidiaries are permitted to engage pursuant to Section 6.9.

"Permitted Priority Debt" means (a) Debt of the Borrower and its Subsidiaries (regardless of when incurred), (b) Debt of the Borrower's Subsidiaries existing on the Closing Date and any Permitted Refinancing Debt in respect thereof, (c) Debt of the Guarantors (other than guarantees of Excluded Specified Debt), (d) unsecured Debt of any Subsidiary owing to any other Subsidiary, the Borrower or Lumen, (e) that portion of the capital leases of the Borrower's Subsidiaries that does not exceed the aggregate principal amount of capital leases of the Borrower's Subsidiaries on the Closing Date, (f) Excluded Specified Debt and (g) Funded Debt of any joint venture, including any joint venture that qualifies as a Subsidiary, in an aggregate amount at any time not to exceed \$200,000,000, including Guaranties of such Funded Debt.

"Permitted Refinancing Debt" means Debt which represents an extension, refinancing, refunding, replacement or renewal of any other Debt; provided, that (a) the principal amount (or accreted value, if applicable) thereof does not exceed the principal amount (or accreted value, if

applicable) of the Debt so extended, refinanced, refunded, replaced or renewed, except by an amount equal to unpaid accrued interest and premium (including applicable prepayment penalties) thereon plus fees and expenses reasonably incurred in connection therewith, (b) any Liens securing such Debt are not extended to any additional property of any Loan Party, (c) no Loan Party that is not originally obligated with respect to repayment of such Debt is required to become obligated with respect thereto and (d) if the Debt that is extended, refinanced, refunded, replaced or renewed was subordinated in right of payment to the Obligations or any Guaranty thereof, then the terms and conditions of the extension, refinancing, refunding, replacement or renewal Debt must include subordination terms and conditions that are at least as favorable to the Lenders as those that were applicable to the extended, refinanced, refunded, replaced or renewed Debt.

“Person” means and includes an individual, partnership, joint venture, corporation, trust, limited liability company, limited liability partnership, or other entity, Tribunal, unincorporated organization, or government, or any department, agency, or political subdivision thereof.

“Plan” means any employee pension benefit plan (other than a Multiemployer Plan) that is (i) subject to the provisions of Title IV of ERISA or Section 412 of the Code or Section 302 of ERISA, (ii) sponsored or maintained (at the time of determination or at any time within the five years prior thereto) by any Company or any ERISA Affiliate, and (iii) in respect of which any Company or any ERISA Affiliate is (or, if such plan were terminated, would under Section 4069 of ERISA be deemed to be) an “employer” as defined in Section 3(5) of ERISA.

“Prime Rate” means a variable rate of interest per annum equal to the “U.S. prime rate” as reported on such day in the Money Rates Section of the Eastern Edition of *The Wall Street Journal*, or if the Eastern Edition of *The Wall Street Journal* is not published on such day, such rate as last published in the Eastern Edition of *The Wall Street Journal*.

“Prohibited Transaction” has the meaning assigned to such term in section 406 of ERISA and section 4975(c) of the Code.

“Qualified Receivables Transaction” means any transaction or series of transactions that may be entered into by the Borrower or any of its Subsidiaries pursuant to which the Borrower or any of its Subsidiaries may sell, convey or otherwise transfer to (a) a Receivables Entity (in the case of a transfer by the Borrower or any of its Subsidiaries) or (b) any other Person (in the case of a transfer by a Receivables Entity), or may grant a security interest in, any accounts receivable (whether now existing or arising in the future) of the Borrower or any of its Subsidiaries, and any assets related thereto including, without limitation, all collateral securing such accounts receivable, all contracts and all guarantees or other obligations in respect of such accounts receivable, the proceeds of such receivables and other assets which are customarily transferred, or in respect of which security interests are customarily granted, in connection with asset securitization involving accounts receivable.

“Real Property” means, collectively, all right, title and interest (including any leasehold estate) in and to any and all parcels of or interests in real property owned in fee or leased by the Borrower or any Subsidiary, whether by lease, license or other means, together with, in each

case, all easements, hereditaments and appurtenances relating thereto, all improvements and appurtenant fixtures and equipment, incidental to the ownership, lease or operation thereof.

“Receivables Entity” means a Wholly Owned Subsidiary of the Borrower (to which the Borrower or any Subsidiary transfers accounts receivable and related assets pursuant to a Qualified Receivables Transaction) which engages in no activities other than in connection with the financing of accounts receivable and whose assets consist solely of receivables and related assets transferred to such entity in connection with a Qualified Receivables Transaction:

(a) no portion of the Debt or any other obligations (contingent or otherwise) of which:

(i) is guaranteed by the Borrower or any Subsidiary (excluding guarantees of obligations (other than the principal of, and interest on, Debt) pursuant to Standard Securitization Undertakings);

(ii) is recourse to or obligates the Borrower or any Subsidiary in any way other than pursuant to Standard Securitization Undertakings; or

(iii) subjects any property or asset of the Borrower or any Subsidiary, directly or indirectly, contingently or otherwise, to the satisfaction thereof, other than pursuant to Standard Securitization Undertakings;

(b) with which neither the Borrower nor any Subsidiary has any material contract, agreement, arrangement or understanding (except in connection with a Qualified Receivables Transaction) other than on terms no less favorable to the Borrower or such Subsidiary than those that might be obtained at the time from Persons that are not Affiliates of the Borrower, other than fees payable in the ordinary course of business in connection with servicing accounts receivable; and

(c) to which neither the Borrower nor any Subsidiary has any obligation to maintain or preserve such entity’s financial condition or cause such entity to achieve certain levels of operating results (except pursuant to Standard Securitization Undertakings).

Any designation by the Borrower of a Wholly Owned Subsidiary as a Receivables Entity shall be evidenced to the Administrative Agent by delivering to the Administrative Agent a certificate from a Financial Officer of the Borrower certifying that such designation complied with the foregoing conditions.

“Register” is defined in Section 10.18(b)(iv).

“Regulation D” means Regulation D of the Board, as the same is from time to time in effect, and all official rulings and interpretations thereunder or thereof.

“Regulation G” means Regulation G of the Board, as the same is from time to time in effect, and all official rulings and interpretations thereunder or thereof.

“Regulation T” means Regulation T of the Board, as the same is from time to time in effect, and all official rulings and interpretations thereunder or thereof.

“Regulation U” means Regulation U of the Board, as the same is from time to time in effect, and all official rulings and interpretations thereunder or thereof.

“Regulation X” means Regulation X of the Board, as the same is from time to time in effect, and all official rulings and interpretations thereunder or thereof.

“Regulatory Change” means, with respect to any Lender, (a) any adoption or change after the date hereof of or in United States federal, state or foreign Laws (including Regulation D) or guidelines applying to a class of banks including such Lender, (b) the adoption or making after the date hereof of any interpretations, directives or requests applying to a class of banks including such Lender of or under any United States federal, state or foreign Laws or guidelines (whether or not having the force of law) by any Tribunal, monetary authority, central bank, or comparable agency charged with the interpretation or administration thereof, or (c) any change in the interpretation or administration of any United States federal, state or foreign Laws or guidelines applying to a class of banks including such Lender by any Tribunal, monetary authority, central bank, or comparable agency charged with the interpretation or administration thereof; provided that, notwithstanding anything herein to the contrary, (i) all requests, rules, guidelines, requirements and directives promulgated by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any successor or similar authority) or by United States or foreign regulatory authorities, in each case pursuant to Basel III, and (ii) the Dodd-Frank Wall Street Reform and Consumer Protection Act and all requests, rules, guidelines, requirements and directives thereunder or issued in connection therewith or in implementation thereof, shall in each case be deemed to be a Regulatory Change, regardless of the date enacted, adopted, issued or implemented.

“Relevant Governmental Body” means the Federal Reserve Board and/or the Federal Reserve Bank of New York, or a committee officially endorsed or convened by the Federal Reserve Board and/or the Federal Reserve Bank of New York or any successor thereto.

“Reorganization” means, with respect to any Multiemployer Plan, the condition that such plan is in reorganization within the meaning of section 4241 of ERISA.

“Reportable Event” means any reportable event as defined in Section 4043(c) of ERISA or the regulations issued thereunder, other than those events as to which the 30-day notice period referred to in Section 4043(c) of ERISA has been waived, with respect to a Plan (other than a Plan maintained by an ERISA Affiliate that is considered an ERISA Affiliate only pursuant to subsection (m) or (o) of Section 414 of the Code).

“Responsible Officer” of any person means any manager, executive officer or Financial Officer of such person and any other officer or similar official thereof responsible for the administration of the obligations of such person in respect of this Agreement, or any other duly authorized employee or signatory of such person.

“Restricted Payment” means

(a) the declaration or payment of dividends by the Borrower, or distribution (in cash, property, obligations or other securities or any combination thereof) on account of any shares of any class of Capital Stock of the Borrower,

(b) other payments or distributions by the Borrower whether by reduction of capital or otherwise on account of any shares of any class of Capital Stock of the Borrower, or

(c) the setting apart of money for a sinking or other analogous fund by the Borrower for the purchase, redemption, retirement or other acquisition of any shares of any class of Capital Stock of the Borrower, or any warrant, option or other right to acquire any Capital Stock of the Borrower;

but in each case in (a), (b) and (c) above, excluding dividends or other distributions payable solely in common stock of the Borrower.

“Rights” means rights, remedies, powers, and privileges.

“S&P” means Standard and Poor’s Financial Services LLC.

“Sanctioned Country” means, at any time, a country or territory which is itself the subject or target of any Sanctions (at the time of this Agreement, Crimea, Cuba, Iran, North Korea, Sudan and Syria).

“Sanctions” means economic or financial sanctions or trade embargoes imposed, administered or enforced from time to time by (a) the U.S. government, including those administered by the Office of Foreign Assets Control of the U.S. Department of the Treasury or the U.S. Department of State, (b) the Office of the Superintendent of Financial Institutions, (c) Her Majesty’s Treasury, (d) the European Union or (e) the United Nations Security Council.

“SEC” means the Securities and Exchange Commission.

“Senior Unsecured Long-Term Debt Rating” means, as of any date, the Debt Rating that has been most recently announced by S&P and Moody’s. In connection with any determination of the Senior Unsecured Long-Term Debt Rating pursuant to the immediately preceding sentence, for purposes of determining the Applicable Margin, (a) if only one of S&P and Moody’s shall have in effect a public debt rating, the Applicable Margin shall be determined by reference to the available rating; (b) if the ratings established by S&P and Moody’s shall fall within different levels, the Applicable Margin shall be based upon the higher rating, except that if the difference is two or more levels, the Applicable Margin shall be based on the rating that is one level below the higher rating; (c) if any rating established by S&P or Moody’s shall be changed, such change shall be effective as of the date on which such change is first announced publicly by the rating agency making such change; (d) if S&P or Moody’s shall change the basis on which ratings are established, each reference to the public debt rating announced by S&P or Moody’s, as the case may be, shall refer to the then equivalent rating by S&P or Moody’s, as the

case may be; (e) if neither S&P nor Moody's shall have in effect a public debt rating but at least one of S&P and Moody's has in effect a rating for any class of senior secured debt with an original term of longer than one year issued by the Borrower, the Applicable Margin shall be determined by reference to a rating that is one level lower than the rating that has been most recently announced by S&P and Moody's for such class of debt; and (f) if neither S&P nor Moody's shall have in effect either a public debt rating or a rating for any class of senior secured debt with an original term of longer than one year issued by the Borrower, the Applicable Margin shall be set in accordance with the lowest level rating and highest percentage rate set forth in the table relating to "Applicable Margin."

"SOFR" means, with respect to any day, the secured overnight financing rate published for such day by the Federal Reserve Bank of New York, as the administrator of the benchmark, (or a successor administrator) on the Federal Reserve Bank of New York's Website.

"Solvent" means, as to any Person at the time of determination, that (a) the aggregate fair value of such Person's assets exceeds the present value of its liabilities (whether contingent, subordinated, unmatured, unliquidated, or otherwise), and (b) such Person has sufficient cash flow to enable it to pay its Debts as they mature.

"Standard Securitization Undertakings" means representations, warranties, covenants and indemnities entered into by the Borrower or any Subsidiary which are reasonably customary in securitization of accounts receivable transactions (it being understood that in no event shall Standard Securitization Undertakings include any Guaranty in respect of principal or interest on the financing for any Qualified Receivables Transaction).

"Subsidiary" means any Person with respect to which the Borrower or any one or more of Borrower's direct or indirect subsidiaries owns directly or indirectly more than 50% of the issued and outstanding voting Capital Stock (or equivalent interests); provided, that any such Person that has been designated as an Unrestricted Subsidiary pursuant to Section 5.12 (and has not subsequently been redesignated as a "Subsidiary" rather than an Unrestricted Subsidiary) shall be deemed not to be a "Subsidiary" for all purposes of the Loan Papers. Unless the context otherwise requires, all references to "Subsidiary" or to "Subsidiaries" in this Agreement shall refer to a Subsidiary or Subsidiaries of the Borrower.

"Subsidiary Encumbrance" is defined in Section 6.14(b).

"Swap Agreement" means any agreement with respect to any swap, forward, future or derivative transaction or option or similar agreement involving, or settled by reference to, one or more rates, currencies, commodities, equity or debt instruments or securities, or economic, financial or pricing indices or measures of economic, financial or pricing risk or value or any similar transaction or any combination of these transactions. Notwithstanding the foregoing, for all purposes of the Loan Papers, any guarantee of any obligations in respect of a Swap Agreement by a Guarantor shall not include any Excluded Swap Obligations with respect to such Guarantor.

“Swap Obligation” means, with respect to any Guarantor, any obligation to pay or perform under any agreement, contract or transaction that constitutes a “swap” within the meaning of Section 1a(47) of the Commodity Exchange Act.

“Taxes” means all taxes, assessments, fees, or other charges at any time imposed by any Laws or Tribunal.

“Term SOFR” means the forward-looking term rate based on SOFR that has been selected or recommended by the Relevant Governmental Body.

“Termination Date” means October 23, 2027, subject, however, to any extension of Loans pursuant to Section 2.22.

“Term Percentage” means the percentage which the aggregate principal amount of such Lender’s Loans then outstanding constitutes of the aggregate principal amount of the Loans then outstanding.

“Tribunal” means any municipal, state, commonwealth, federal, foreign, territorial, or other court, governmental body, subdivision, agency, department, commission, board, bureau, central bank or instrumentality, or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions of or pertaining to government (including any supra-national bodies such as the European Union or the European Central Bank).

“Type” means any type of Loan (i.e., a Base Rate Loan or LIBOR Loan).

“Unadjusted Benchmark Replacement” means the Benchmark Replacement excluding the Benchmark Replacement Adjustment.

“United States” and “U.S.” each means United States of America.

“Unrestricted Subsidiary” means any Subsidiary of the Borrower designated by the Board of Directors as an Unrestricted Subsidiary pursuant to Section 5.12 after the Closing Date.

“Voting Participant” is defined in Section 10.18(d).

“Voting Participant Notice” is defined in Section 10.18(d).

“Voting Stock” means securities (as such term is defined in Section 2(1) of the Securities Act of 1933, as amended) of any class or classes, the holders of which are ordinarily, in the absence of contingencies, entitled to elect a majority of the corporate directors (or Persons performing similar functions).

“Wholly Owned Subsidiary” means, as to any Person, any other Person all of the Capital Stock of which (other than directors’ qualifying shares required by law) is owned by such Person directly and/or through other Wholly Owned Subsidiaries.

“Withdrawal Liability” means liability to a Multiemployer Plan as a result of a complete or partial withdrawal from such Multiemployer Plan, as such terms are defined in Part I of Subtitle E of Title IV of ERISA.

1.2 Terms Generally, Accounting Principles.

All accounting and financial terms used in the Loan Papers and not defined in Section 1.1, all accounting terms and financial terms partly defined in Section 1.1, to the extent not defined, and the compliance with each financial covenant therein shall be determined in accordance with GAAP, as modified from time to time by any Accounting Changes (as defined below) (provided that, notwithstanding anything to the contrary herein, all terms of an accounting or financial nature used herein shall be construed, and all computations of amounts and ratios referred to herein shall be made, without giving effect to any election under Accounting Standards Codification 825-10-25 (previously referred to as Statement of Financial Accounting Standards 159) (or any other Accounting Standards Codification or Financial Accounting Standard having a similar result or effect) to value any Debt or other liabilities of any Company at “fair value,” as defined therein). In the event that (i) any Accounting Change shall occur, (ii) such change results in a change in the method of calculation of financial covenants, standards or terms in the Loan Papers and (iii) the Borrower determines that such change will create a risk of a Default or an Event of Default, then the Borrower may notify the Administrative Agent that it will not adopt such Accounting Change for purposes of the Loan Papers and that the method of calculation of financial covenants, standards or terms in the Loan Papers shall remain unaffected thereby. “Accounting Changes” refers to changes in accounting principles required by the promulgation of any rule, regulation, pronouncement or opinion by the Financial Accounting Standards Board of the American Institute of Certified Public Accountants or, if applicable, the SEC. Any reference herein to a merger, transfer, consolidation, amalgamation, consolidation, assignment, sale, disposition or transfer, or similar term, shall be deemed to apply to a division of or by a limited liability company, or an allocation of assets to a series of a limited liability company (or the unwinding of such a division or allocation), as if it were a merger, transfer, consolidation, amalgamation, consolidation, assignment, sale, disposition or transfer, or similar term, as applicable, to, of or with a separate person. Any division of a limited liability company shall constitute a separate person hereunder (and each division of any limited liability company that is a Subsidiary, joint venture or any other like term shall also constitute such a person or entity).

1.1 Other Definitional Provisions. As used herein and in the other Loan Papers, (i) the words “include,” “includes” and “including” shall be deemed to be followed by the phrase “without limitation,” (ii) the word “incur” shall be construed to mean incur, create, issue, assume, become liable in respect of or suffer to exist (and the words “incurred” and “incurrence” shall have correlative meanings), (iii) the words “asset” and “property” shall be construed to have the same meaning and effect and to refer to any and all tangible and intangible assets and properties, including cash, Capital Stock, securities, revenues, accounts, leasehold interests and contract rights, and (iv) references to agreements or other contractual obligations shall, unless otherwise specified, be deemed to refer to such agreements or contractual obligations as amended, supplemented, restated or otherwise modified from time to time.

SECTION 2
FACILITIES.

2.1 Commitments.

Subject to the terms and conditions hereof, each Lender severally agrees to make a term loan (each, a “Loan”) to the Borrower on the Closing Date in an amount not to exceed the amount of such Lender’s Commitment. The Loans may from time to time be LIBOR Loans or Base Rate Loans, as determined by the Borrower and notified to the Administrative Agent in accordance with Sections 2.2 and 2.3. The Commitments shall automatically terminate on the Closing Date after the Loans have been made.

2.2 Procedure For Loan Borrowing.

The Borrower shall give the Administrative Agent irrevocable notice (which notice must be received by the Administrative Agent prior to 1:00 P.M., New York City time, (a) three Business Days prior to the Closing Date, in the case of LIBOR Loans, or (b) on the Closing Date, in the case of Base Rate Loans), substantially in the form of Exhibit H, specifying (i) the amount and Type of Loans requested to be borrowed on the Closing Date and (ii) in the case of LIBOR Loans, the respective amounts of each such Type of Loan and the respective lengths of the initial Interest Period therefor. All Loans shall initially be Base Rate Loans unless the Borrower has provided the notice for LIBOR Loans set forth in clause (a) above and has entered into a pre-funding indemnity agreement with respect to such borrowing of LIBOR Loans on the Closing Date in form and substance reasonably satisfactory to the Administrative Agent. Upon receipt of any such notice from the Borrower, the Administrative Agent shall promptly notify each Lender thereof. Each Lender will make the amount of Loans to be made by such Lender available to the Administrative Agent for the account of the Borrower at the Funding Office prior to 2:00 P.M., New York City time, on the Closing Date in funds immediately available to the Administrative Agent. Such borrowing will then be made available to the Borrower by the Administrative Agent wiring the money in accordance with instructions from the Borrower with the aggregate of the amounts made available to the Administrative Agent by the Lenders and in like funds as received by the Administrative Agent.

2.3 Repayment of Term Loans.

The Borrower unconditionally agrees to pay to the Lenders the then outstanding unpaid principal amount of the Loans on the Termination Date. Interest accruing on the Loans shall be payable on each Interest Payment Date until the Termination Date.

2.4 Conversion and Continuation Options.

(a) The Borrower may elect from time to time to convert LIBOR Loans to Base Rate Loans by giving the Administrative Agent prior irrevocable notice of such election no later than 1:00 P.M., New York City time, on the Business Day preceding the proposed conversion date, provided, that any such conversion of LIBOR Loans may only be made on the

last day of an Interest Period with respect thereto (unless the Borrower pays the amount owing pursuant to Section 2.12). The Borrower may elect from time to time to convert Base Rate Loans to LIBOR Loans by giving the Administrative Agent prior irrevocable notice of such election no later than 1:00 P.M., New York City time, on the third Business Day preceding the proposed conversion date (which notice shall specify the length of the initial Interest Period therefor; provided, that no Base Rate Loan may be converted into a LIBOR Loan when any Event of Default has occurred and is continuing and the Administrative Agent or the Majority Lenders have determined in its or their sole discretion not to permit such conversions. Upon receipt of any such notice the Administrative Agent shall promptly notify each relevant Lender thereof.

(b) Any LIBOR Loan may be continued as such upon the expiration of the then current Interest Period with respect thereto by the Borrower giving irrevocable notice to the Administrative Agent, in accordance with the applicable provisions of the term "Interest Period" set forth in Section 1.1, of the length of the next Interest Period to be applicable to such Loans; provided, that no LIBOR Loan may be continued as such when any Event of Default has occurred and is continuing and the Administrative Agent has or the Majority Lenders have determined in its or their sole discretion not to permit such continuations; provided, further, that if the Borrower shall fail to give any required notice as described above in this paragraph or if such continuation is not permitted pursuant to the preceding proviso such Loans shall be automatically converted to Base Rate Loans on the last day of such then expiring Interest Period. Upon receipt of any such notice the Administrative Agent shall promptly notify each relevant Lender thereof.

2.5 Fees.

The Borrower agrees to pay to the Administrative Agent the fees in the amounts and on the dates previously agreed to in writing by the Borrower and the Administrative Agent.

2.6 Limitations on Eurodollar Tranches.

Notwithstanding anything to the contrary in this Agreement, all borrowings, conversions and continuations of LIBOR Loans and all selections of Interest Periods shall be in such amounts and be made pursuant to such elections so that, (a) after giving effect thereto, the aggregate principal amount of the LIBOR Loans comprising each Eurodollar Tranche shall be equal to \$5,000,000 or a whole multiple of \$1,000,000 in excess thereof and (b) no more than ten Eurodollar Tranches shall be outstanding at any one time.

2.7 Interest Rates and Payment Dates.

(a) Each LIBOR Loan shall bear interest for each day during each Interest Period with respect thereto at a rate per annum equal to the LIBOR Rate determined for such day plus the Applicable Margin.

(b) Each Base Rate Loan shall bear interest at a rate per annum equal to the Base Rate plus the Applicable Margin.

(c) (i) If all or a portion of the principal amount of any Loan shall not be paid when due (whether at the stated maturity, by acceleration or otherwise), all outstanding Loans shall bear interest at a rate per annum equal to the rate that would otherwise be applicable thereto pursuant to the foregoing provisions of this Section plus 2%, and (ii) if all or a portion of any interest payable on any Loan or any fee or other amount payable hereunder shall not be paid when due (whether at the stated maturity, by acceleration or otherwise), such overdue amount shall bear interest at a rate per annum equal to the rate then applicable to Base Rate Loans plus 2% in each case, with respect to clauses (i) and (ii) above, from the date of such non-payment until such amount is paid in full (as well after as before judgment).

(d) Interest shall be payable in arrears on each Interest Payment Date; provided, that interest accruing pursuant to paragraph (c) of this Section shall be payable from time to time on demand.

2.8 Alternate Rate of Interest for LIBOR Loans; Effect of Benchmark Transition Event.

(a) In the event, and on each occasion, that on the day two Business Days prior to the commencement of any Interest Period for a LIBOR Loan, the Administrative Agent shall have determined that dollar deposits in the amount of the requested principal amount of such LIBOR Loan are not generally available in the London interbank market, or that dollar deposits are not generally available in the London interbank market for the requested Interest Period, or that the rate at which such dollar deposits are being offered will not adequately and fairly reflect the cost to any Lender of making or maintaining such LIBOR Loan during such Interest Period, or that reasonable means do not exist for ascertaining the LIBOR Rate, the Administrative Agent shall, as soon as practicable thereafter, give telecopy notice of such determination, stating the specific reasons therefor, to the Borrower and the Lenders. In the event of any such determination, any request by the Borrower for a LIBOR Loan shall, until the circumstances giving rise to such notice no longer exist, be deemed to be a request for a Base Rate Loan. Each determination by the Administrative Agent hereunder shall be conclusive absent manifest error.

(b) Effect of Benchmark Transition Event.

(i) Benchmark Replacement. Notwithstanding anything to the contrary herein or in any other Loan Paper, upon the occurrence of a Benchmark Transition Event or an Early Opt-in Election, as applicable, the Administrative Agent and the Borrower may amend this Agreement to replace the LIBOR Rate with a Benchmark Replacement. Any such amendment with respect to a Benchmark Transition Event will become effective at 5:00 p.m. on the fifth (5th) Business Day after the Administrative Agent has posted such proposed amendment to all Lenders and the Borrower so long as the Administrative Agent has not received, by such time, written notice of objection to such amendment from Lenders comprising the Majority Lenders (which written notice will specify the provisions of such amendment to which such Lender objects). Any such amendment with respect to an Early Opt-in Election will become effective on the date that Lenders comprising the Majority Lenders have delivered to the Administrative Agent

written notice that such Majority Lenders accept such amendment. No replacement of the LIBOR Rate with a Benchmark Replacement pursuant to this Section 2.8(b) will occur prior to the applicable Benchmark Transition Start Date.

(ii) Benchmark Replacement Conforming Changes. In connection with the implementation of a Benchmark Replacement, the Administrative Agent will have the right to make Benchmark Replacement Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Paper, any amendments implementing such Benchmark Replacement Conforming Changes will become effective without any further action or consent of any other party to this Agreement.

(iii) Notices; Standards for Decisions and Determinations. The Administrative Agent will promptly notify the Borrower and the Lenders of (A) any occurrence of a Benchmark Transition Event or an Early Opt-in Election, as applicable, (B) the implementation of any Benchmark Replacement, (C) the effectiveness of any Benchmark Replacement Conforming Changes and (D) the commencement or conclusion of any Benchmark Unavailability Period. Any determination, decision or election that may be made by the Administrative Agent or Lenders pursuant to this Section 2.8(b) including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action, will be conclusive and binding absent manifest error and may be made in its or their sole discretion and without consent from any other party hereto, except, in each case, as expressly required pursuant to this Section 2.8(b).

(iv) Benchmark Unavailability Period. Upon the Borrower's receipt of notice of the commencement of a Benchmark Unavailability Period, (A) any notice of conversion or continuation pursuant to Section 2.4 that requests the conversion of any Borrowing to, or continuation of any Borrowing as, a Borrowing at the LIBOR Rate shall be ineffective and (ii) if any Loan Request requests a Borrowing at the LIBOR Rate, such Borrowing shall be made as a Borrowing at the Base Rate. During any Benchmark Unavailability Period, the component of the Base Rate based upon the LIBOR Rate will not be used in any determination of Base Rate.

2.9 Mandatory and Optional Prepayment of Loans.

(a) Prior to the Termination Date, the Borrower shall have the right at any time to prepay the Loans, in whole or in part, subject to the requirements of Sections 2.12 and 2.13 but otherwise without premium or penalty, but prepayment of LIBOR Loans shall require at least three Business Days prior written notice to the Administrative Agent; provided, however, that each such partial prepayment shall be in an integral multiple of \$1,000,000 and in a minimum aggregate principal amount of \$2,000,000; provided, further, that a failure to provide three (3) Business Days' prior written notice in the case of a prepayment of a LIBOR Loan shall not constitute a Default but instead shall entitle the Lenders to remedies identified in Section 2.12. Each notice of prepayment, with respect to LIBOR Loans, shall specify the prepayment date and the aggregate principal amount of each Borrowing to be prepaid and may be revocable;

provided, that (i) such notice is only revocable during the three Business Day period beginning on the date that such notice is given to the Administrative Agent and ending on the stated date of such prepayment and (ii) the Borrower shall indemnify the Lenders pursuant to Section 2.12 as a result of the Borrower's revocation of such notice.

(b) All Loans, together with accrued and unpaid interest thereon, shall be due and payable in full on the Termination Date.

(c) All prepayments of Loans (other than optional prepayments of Base Rate Loans) under this Section 2.9 shall be accompanied by accrued interest on the principal amount being prepaid to the date of prepayment.

2.10 Reserve Requirements; Change in Circumstances.

(a) Notwithstanding any other provision herein, if after the Closing Date any Regulatory Change (i) subjects any Lender to any Taxes (other than (x) Non-Excluded Taxes or Taxes described in clause (i) or (ii) of the first sentence in Section 2.19(a) or (y) any Tax that would not have been imposed but for the failure of any Lender to comply with any certification, information, documentation, or other reporting requirement if such Lender could legally comply and such compliance would not materially prejudice such Lender's legal or commercial position) on its loans, loan principal or other obligations, or its deposits, reserves, other liabilities or capital attributable thereto, (ii) shall impose, modify, or deem applicable any reserve, special deposit, or similar requirement with respect to any LIBOR Loan (or participating interest therein), against assets of, deposits with or for the account of, or credit extended by, such Lender under this Agreement, or (iii) with respect to any LIBOR Loan, shall impose on such Lender or the London interbank market any other condition affecting this Agreement or any LIBOR Loan made by such Lender, and the result of any of the foregoing shall be to increase the cost to such Lender of making or maintaining any LIBOR Loan or to reduce the amount of any sum received or receivable by such Lender hereunder (whether of principal, interest, or otherwise) in respect thereof by an amount deemed in good faith by such Lender to be material, then the Borrower shall pay to the Administrative Agent for the account of such Lender such additional amount or amounts as will compensate such Lender for such increase or reduction to such Lender, to the extent such amounts have not been included in the calculation of the LIBOR Rate, upon demand by such Lender (through the Administrative Agent).

(b) If any Lender shall have determined in good faith that any Regulatory Change regarding capital or liquidity requirements or compliance by any Lender (or its Parent or any lending office of such Lender) with any request or directive regarding capital or liquidity requirements (whether or not having the force of Law) of any Tribunal, monetary authority, central bank, or comparable agency, has or would have the effect of reducing the rate of return on such Lender's (or its Parent's) capital as a consequence of its obligations hereunder to a level below that which such Lender (or its Parent) could have achieved but for such Regulatory Change, or compliance (taking into consideration such Lender's policies with respect to capital and liquidity requirements) by an amount deemed in good faith by such Lender to be material, then from time to time, the Borrower shall pay to the Administrative Agent for the account of

such Lender such additional amount or amounts as will compensate such Lender for such reduction upon demand by such Lender (through the Administrative Agent).

(c) A certificate of a Lender setting forth in reasonable detail (i) the Regulatory Change or other event giving rise to such costs, (ii) such amount or amounts as shall be necessary to compensate such Lender as specified in paragraph (a) or (b) above, as the case may be, (iii) the calculation of such amount or amounts under clause (a) or (b) above, shall be delivered to the Borrower (with a copy to the Administrative Agent) promptly after such Lender determines it is entitled to compensation under this Section 2.10, and shall be conclusive and binding absent manifest error and (iv) confirmation from such Lender that such costs are also being assessed to other similarly situated borrowers. The Borrower shall pay to the Administrative Agent for the account of such Lender the amount shown as due on any such certificate within 15 days after its receipt of the same; provided that the Borrower shall not be required to pay the Administrative Agent for the account of such Lender pursuant to this Section 2.10 for any amount specified in clause (a) or (b) above in respect of a period occurring more than 180 days prior to the date on which such Lender notifies the Borrower of such Regulatory Change and such Lender's intention to claim compensation therefor, except, if the Regulatory Change giving rise to any amount specified in clause (a) or (b) above is retroactive, no such time limitation shall apply so long as such Lender requests compensation within 180 days from the date on which the applicable Tribunal informed such Lender of such Regulatory Change. In preparing such certificate, such Lender may employ such assumptions and allocations of costs and expenses as it shall in good faith deem reasonable and may use any reasonable averaging and attribution method.

(d) The protection of this Section 2.10 shall be available to each Lender regardless of any possible contention of invalidity or inapplicability of the law, regulation, or condition which shall have been imposed.

(e) Without prejudice to the survival of any other obligations of the Borrower hereunder, the obligations of the Borrower under this Section 2.10 shall survive for one year after the termination of this Agreement and/or the payment or assignment of any of the Loans or Notes.

2.11 Change in Legality.

(a) Notwithstanding anything to the contrary herein contained, if any Regulatory Change shall make it unlawful for any Lender to make or maintain any LIBOR Loan or to give effect to its obligations as contemplated hereby, then, by written notice to the Borrower and to the Administrative Agent, such Lender may:

(i) declare that LIBOR Loans will not thereafter be made by such Lender hereunder, whereupon the Borrower shall be prohibited from requesting LIBOR Loans from such Lender hereunder unless such declaration is subsequently withdrawn; and

(ii) if such unlawfulness shall be effective prior to the end of any Interest Period of an outstanding LIBOR Loan, require that all outstanding LIBOR Loans with such Interest Periods made by it be converted to Base Rate Loans, in which event (A) all such LIBOR Loans shall be automatically converted to Base Rate Loans as of the effective date of such notice as provided in paragraph (b) below and (B) all payments and prepayments of principal which would otherwise have been applied to repay the converted LIBOR Loans shall instead be applied to repay the Base Rate Loans resulting from the conversion of such LIBOR Loans.

(b) For purposes of this Section 2.11, a notice to the Borrower (with a copy to the Administrative Agent) by any Lender pursuant to paragraph (a) above shall be effective on the date of receipt thereof by the Borrower.

2.12 Indemnity.

The Borrower agrees to indemnify each Lender for, and to hold each Lender harmless from, any loss of expense that such Lender may sustain or incur as a consequence of (a) default by the Borrower in making a borrowing of, conversion into or continuation of LIBOR Loans after the Borrower has given a notice requesting the same in accordance with the provisions of this Agreement, (b) default by the Borrower in making any prepayment of or conversion from LIBOR Loans after the Borrower has given a notice thereof in accordance with the provisions of this Agreement or (c) the making of a prepayment of LIBOR Loans on a day that is not the last day of an Interest Period with respect thereto. Such indemnification may include an amount equal to the excess, if any, of (i) the amount of interest that would have accrued on the amount so prepaid, or not so borrowed, converted or continued, for the period from the date of such prepayment or of such failure to borrow, convert or continue to the last day of such Interest Period (or, in the case of a failure to borrow, convert or continue, the Interest Period that would have commenced on the date of such failure) in each case at the applicable rate of interest for such Loans provided for herein (excluding, however, the Applicable Margin included therein, if any) over (ii) the amount of interest (as reasonably determined by such Lender) that would have accrued to such Lender on such amount by placing such amount on deposit for a comparable period with leading banks in the interbank eurodollar market. A certificate as to any amounts payable pursuant to this Section 2.12 submitted to the Borrower by any Lender shall be conclusive in the absence of manifest error. This covenant shall survive the termination of this Agreement and the payment of the Loans and all other amounts payable hereunder.

2.13 Pro Rata Treatment.

Unless otherwise specifically provided herein, each payment or prepayment of principal and each payment of interest with respect to a Borrowing shall be made pro rata among the Lenders in accordance with the respective principal amounts of the Loans extended by each Lender with respect to such Borrowing, and conversions of Loans to Loans of another Type and continuations of Loans that are LIBOR Loans from one Interest Period, shall be made pro rata among the Lenders in accordance with their respective Term Percentages.

2.14 Sharing of Setoffs.

Each Lender agrees that if it shall, through the exercise of a right of banker's lien, setoff, or counterclaim against the Borrower, including, but not limited to, a secured claim under Section 506 of Title 11 of the United States Code or other security or interest arising from, or in lieu of, such secured claim, received by such Lender under any applicable Debtor Relief Law or otherwise, obtain payment (voluntary or involuntary) in respect of the Loans held by it (other than pursuant to Section 2.10 or 2.12) as a result of which the unpaid principal portion of the Loans held by it shall be proportionately less than the unpaid principal portion of the Loans held by any other Lender, it shall be deemed to have simultaneously purchased from such other Lender a participation in the Loans held by such other Lender, so that the aggregate unpaid principal amount of the Loans and participations in Loans held by each Lender shall be in the same proportion to the aggregate unpaid principal amount of all Loans then outstanding as the principal amount of the Loans held by it prior to such exercise of banker's lien, setoff, or counterclaim was to the principal amount of all Loans outstanding prior to such exercise of banker's lien, setoff, or counterclaim; provided, however, that if any such purchase or purchases or adjustments shall be made pursuant to this Section 2.14 and the payment giving rise thereto shall thereafter be recovered, such purchase or purchases or adjustments shall be rescinded to the extent of such recovery and the purchase price or prices or adjustment restored without interest. The Borrower expressly consents to the foregoing arrangements and agrees that any Lender holding a participation in Loans deemed to have been so purchased may, upon the existence of an Event of Default, exercise any and all rights of banker's lien, setoff, or counterclaim with respect to any and all moneys owing by the Borrower to such Lender as fully as if such Lender had made a Loan directly to the Borrower in the amount of such participation. This Section 2.14 shall not apply to any action taken by CoBank with respect to any CoBank Equities held by the Borrower, including pursuant to Section 8.1(b).

2.15 Payments.

(a) All payments (including prepayments) to be made by the Borrower hereunder, whether on account of principal, interest, fees or otherwise, shall be made without setoff or counterclaim and shall be made prior to 1:00 P.M., New York City time, on the due date thereof to the Administrative Agent, for the account of the Lenders, at the Funding Office, in Dollars and in immediately available funds. The Administrative Agent shall distribute such payments to each relevant Lender promptly upon receipt in like funds as received, net of any amounts owing by such Lender pursuant to Section 9.7. If any payment hereunder (other than payments on the LIBOR Loans) becomes due and payable on a day other than a Business Day, such payment shall be extended to the next succeeding Business Day. If any payment on a LIBOR Loan becomes due and payable on a day other than a Business Day, the maturity thereof shall be extended to the next succeeding Business Day unless the result of such extension would be to extend such payment into another calendar month, in which event such payment shall be made on the next preceding Business Day. In the case of any extension of any payment of principal pursuant to the preceding two sentences, interest thereon shall be payable at the then applicable rate during such extension.

(b) Unless the Administrative Agent shall have been notified in writing by any Lender prior to the borrowing that such Lender will not make the amount that would

constitute its share of such borrowing available to the Administrative Agent, the Administrative Agent may assume that such Lender is making such amount available to the Administrative Agent, and the Administrative Agent may, in reliance upon such assumption, make available to the Borrower a corresponding amount. If such amount is not made available to the Administrative Agent by the required time on the Closing Date therefor, such Lender shall pay to the Administrative Agent, on demand, such amount with interest thereon, at a rate equal to the greater of (i) the Federal Funds Effective Rate and (ii) a rate determined by the Administrative Agent in accordance with banking industry rules on interbank compensation, for the period until such Lender makes such amount immediately available to the Administrative Agent. A certificate of the Administrative Agent submitted to any Lender with respect to any amounts owing under this paragraph shall be conclusive in the absence of manifest error. If such Lender's share of such borrowing is not made available to the Administrative Agent by such Lender within three Business Days after such Closing Date, the Administrative Agent shall also be entitled to recover such amount with interest thereon at the rate per annum applicable to Base Rate Loans, on demand, from the Borrower.

(c) Unless the Administrative Agent shall have been notified in writing by the Borrower prior to the date of any payment due to be made by the Borrower hereunder that the Borrower will not make such payment to the Administrative Agent, the Administrative Agent may assume that the Borrower is making such payment, and the Administrative Agent may, but shall not be required to, in reliance upon such assumption, make available to the Lenders their respective pro rata shares of a corresponding amount. If such payment is not made to the Administrative Agent by the Borrower within three Business Days after such due date, the Administrative Agent shall be entitled to recover, on demand, from each Lender to which any amount which was made available pursuant to the preceding sentence, such amount with interest thereon at the rate per annum equal to the daily average Federal Funds Effective Rate. Nothing herein shall be deemed to limit the rights of the Administrative Agent or any Lender against the Borrower.

2.16 Calculation of LIBOR Rate.

The provisions of this Agreement relating to calculation of the LIBOR Rate are included only for the purpose of determining the rate of interest or other amounts to be paid hereunder that are based upon such rate, it being understood that each Lender shall be entitled to fund and maintain its funding of all or any part of a LIBOR Loan as it sees fit. All such determinations hereunder, however, shall be made as if each Lender had actually funded and maintained funding of each LIBOR Loan through the purchase in the London interbank market of one or more eurodollar deposits, in an amount equal to the principal amount of such Loan and having a maturity corresponding to the Interest Period for such Loan.

2.17 Computation of Interest and Fees.

(a) Interest and fees payable pursuant hereto shall be calculated on the basis of a 360-day year for the actual days elapsed, except that, with respect to Base Rate Loans the rate of interest on which is calculated on the basis of the Prime Rate, such calculations shall be made on the basis of a 365- (or 366-, as the case may be) day year for the actual days elapsed.

The Administrative Agent shall as soon as practicable notify the Borrower and the relevant Lenders of each determination of a LIBOR Rate. Any change in the interest rate on a Loan resulting from a change in the Base Rate or the Eurocurrency Reserve Requirements shall become effective as of the opening of business on the day on which such change becomes effective. The Administrative Agent shall as soon as practicable notify the Borrower and the relevant Lenders of the effective date and the amount of each such change in interest rate.

(b) Each determination of an interest rate by the Administrative Agent pursuant to any provision of this Agreement shall be conclusive and binding on the Borrower and the Lenders in the absence of manifest error. The Administrative Agent shall, at the request of the Borrower, deliver to the Borrower a statement showing the quotations used by the Administrative Agent in determining any interest rate pursuant to Section 2.7(a).

2.18 Booking Loans.

Any Lender may make, carry, or transfer Loans at, to, or for the account of any of its branch offices, subject to Section 2.21(a).

2.19 Taxes.

(a) All payments made by or on account of any obligation of any Loan Party under this Agreement or any other Loan Paper shall be made free and clear of, and without deduction or withholding for or on account of, any present or future income, stamp or other taxes, levies, imposts, duties, charges, fees, deductions or withholdings, now or hereafter imposed, levied, collected, withheld or assessed by any Tribunal, excluding (i) income or franchise taxes imposed on (or measured by) net income, in each case, imposed on the Administrative Agent or any Lender as a result of a present or former connection between the Administrative Agent or such Lender and the jurisdiction of the Tribunal imposing such tax or any political subdivision or taxing authority thereof or therein (other than any such connection arising solely from the Administrative Agent or such Lender having executed, delivered or performed its obligations or received a payment under, or enforced, this Agreement or any other Loan Paper) and (ii) any United States federal withholding tax imposed by reason of FATCA as a result of a Lender's failure to comply with the requirements thereof to establish an exemption from withholding thereunder. If any such non-excluded taxes, levies, imposts, duties, charges, fees, deductions or withholdings ("Non-Excluded Taxes") or Other Taxes are required to be withheld from any amounts payable to the Administrative Agent or any Lender hereunder or under any other Loan Paper, the amounts so payable to the Administrative Agent or such Lender shall be increased to the extent necessary to yield to the Administrative Agent or such Lender (after payment of all Non-Excluded Taxes and Other Taxes) interest or any such other amounts payable hereunder at the rates or in the amounts specified in this Agreement as if such deduction or withholding had not been made, provided, however, that the Borrower shall not be required to increase any such amounts payable to any Lender with respect to any Non-Excluded Taxes (x) that are attributable to such Lender's failure to comply with the requirements of paragraph (d) or (e) of this Section or (y) that are United States federal withholding taxes imposed on amounts payable to such Lender at the time such Lender becomes a party to this Agreement, except to the extent that such Lender's assignor (if any) was entitled, at the time of assignment, to receive

additional amounts from the Borrower with respect to such Non-Excluded Taxes pursuant to this paragraph.

(b) In addition, the Loan Party shall pay any Other Taxes to the relevant Tribunal in accordance with applicable Law.

(c) Whenever any Non-Excluded Taxes or Other Taxes are payable by a Loan Party, as promptly as possible thereafter the Borrower shall send to the Administrative Agent for its own account or for the account of the relevant Lender, as the case may be, a certified copy of an original official receipt received by the Loan Party showing payment thereof. If (i) a Loan Party fails to pay any Non-Excluded Taxes or Other Taxes when due to the appropriate taxing authority, (ii) a Loan Party fails to remit to the Administrative Agent the required receipts or other required documentary evidence, or (iii) any Non-Excluded Taxes or Other Taxes are imposed directly upon the Administrative Agent or any Lender, the Loan Parties shall jointly and severally indemnify the Administrative Agent and the Lenders for such amounts and any incremental taxes, interest or penalties that may become payable by the Administrative Agent or any Lender as a result of any such failure, in the case of (i) and (ii), or any such direct imposition, in the case of (iii).

(d) Each Lender (or transferee) that is a “United States Person” as defined in Section 7701(a)(30) of the Code shall deliver to the Borrower and the Administrative Agent on or before the date on which it becomes a party to this Agreement two properly completed and duly executed copies of U.S. Internal Revenue Service Form W-9 (or any successor form) certifying that such Lender is exempt from U.S. federal backup withholding tax. Each Lender (or transferee) that is not a “United States Person” as defined in Section 7701(a)(30) of the Code (a “Non-U.S. Lender”) shall deliver to the Borrower and the Administrative Agent (or, in the case of a Participant, to the Lender from which the related participation shall have been purchased) (i) two copies of either U.S. Internal Revenue Service Form W-8BEN-E, Form W-8ECI, or Form W-8IMY (together with any applicable underlying IRS forms) properly completed and duly executed claiming complete exemption from, or a reduced rate of, U.S. federal withholding tax on all payments by the Borrower under this Agreement and the other Loan Papers, (ii) in the case of a Non-U.S. Lender claiming exemption from U.S. federal withholding tax under Section 871(h) or 881(c) of the Code with respect to payments of “portfolio interest,” a statement substantially in the form of Exhibit G and a Form W-8BEN-E, or any subsequent versions thereof or successors thereto, properly completed and duly executed by such Non-U.S. Lender claiming complete exemption from, or a reduced rate of, U.S. federal withholding tax on all payments by the Borrower under this Agreement and the other Loan Papers, or (iii) any other form prescribed by applicable requirements of U.S. federal income tax law as a basis for claiming exemption from or a reduction in U.S. federal withholding tax duly completed together with such supplementary documentation as may be prescribed by applicable requirements of Law to permit the Borrower and the Administrative Agent to determine the withholding or deduction required to be made. Such forms shall be delivered by each Non-U.S. Lender on or before the date it becomes a party to this Agreement (or, in the case of any Participant, on or before the date such Participant purchases the related participation). In addition, each Non-U.S. Lender shall deliver such forms promptly upon the obsolescence or invalidity of any form

previously delivered by such Non-U.S. Lender. Each Non-U.S. Lender shall promptly notify the Borrower and the Administrative Agent at any time it determines that it is no longer in a position to provide any previously delivered certificate to the Borrower (or any other form of certification adopted by the U.S. taxing authorities for such purpose). Notwithstanding any other provision of this clause, a Non-U.S. Lender shall not be required to deliver any form pursuant to this clause that such Non-U.S. Lender is not legally able to deliver.

(e) A Lender that is entitled to an exemption from or reduction of non-U.S. withholding tax under the Law of the jurisdiction in which the Borrower is located, or any treaty to which such jurisdiction is a party, with respect to payments under this Agreement shall deliver to the Borrower (with a copy to the Administrative Agent), at the time or times prescribed by applicable Law or reasonably requested by the Borrower or the Administrative Agent, such properly completed and executed documentation prescribed by applicable Law as will permit such payments to be made without withholding or at a reduced rate; provided, that such Lender is legally entitled to complete, execute and deliver such documentation and in such Lender's judgment such completion, execution or submission would not materially prejudice the legal or commercial position of such Lender.

(f) To the extent required by any applicable Law, the Administrative Agent may withhold from any payment to any Lender an amount equivalent to any applicable withholding Tax. If the Internal Revenue Service or any other Tribunal asserts a claim that the Administrative Agent did not properly withhold Tax from amounts paid to or for the account of any Lender because the appropriate form was not delivered or was not properly executed or because such Lender failed to notify the Administrative Agent of a change in circumstance which rendered the exemption from, or reduction of, withholding Tax ineffective or for any other reason, such Lender shall indemnify the Administrative Agent fully for all amounts paid, directly or indirectly, by the Administrative Agent as Tax or otherwise, including any penalties or interest and together with all expenses (including legal expenses, allocated internal costs and out-of-pocket expenses) incurred. Each Lender hereby authorizes the Administrative Agent to set off and apply any and all amounts at any time owing to such Lender under any Loan Paper or otherwise payable by the Administrative Agent to the Lender from any other source against any amount due to the Administrative Agent under this paragraph (f).

(g) If the Administrative Agent or any Lender determines, in its sole discretion, that it has received a refund of any Non-Excluded Taxes or Other Taxes as to which it has been indemnified by any Loan Party or with respect to which any Loan Party has paid additional amounts pursuant to this Section 2.19, it shall pay over such refund to the applicable Loan Party (but only to the extent of indemnity payments made, or additional amounts paid, by such Loan Party under this Section 2.19 with respect to the Non-Excluded Taxes or Other Taxes giving rise to such refund), net of all out-of-pocket expenses of the Administrative Agent or such Lender and without interest (other than any interest paid by the relevant Tribunal with respect to such refund); provided, that the Loan Party, upon the request of the Administrative Agent or such Lender, agrees to repay the amount paid over to such Loan Party (plus any penalties, interest or other charges imposed by the relevant Tribunal) to the Administrative Agent or such Lender in the event the Administrative Agent or such Lender is required to repay such refund to such

Tribunal. This clause shall not be construed to require the Administrative Agent or any Lender to make available its tax returns (or any other information relating to its taxes which it deems confidential) to any Loan Party or any other Person.

(h) The agreements in this Section 2.19 shall survive the termination of this Agreement and the payment of the Loans and all other amounts payable hereunder.

2.20 Defaulting Lenders. Notwithstanding any provision of this Agreement to the contrary, if any Lender becomes a Defaulting Lender, then, for so long as such Lender is a Defaulting Lender, the Loan of such Defaulting Lender shall not be included in determining whether the Majority Lenders have taken or may take any action hereunder (including any consent to any amendment, waiver or other modification pursuant to Section 10.14); provided, that (a) such Defaulting Lender's outstanding Loans may not be increased or extended without its consent and (b) the principal amount of, or interest or fees payable on, Loans may not be reduced or excused or the scheduled date of payment may not be postponed as to such Defaulting Lender without such Defaulting Lender's consent.

2.21 Mitigation Obligations; Replacement of Lenders.

(a) If any Lender requests compensation under Section 2.10 or gives notice regarding Regulatory Changes affecting LIBOR Loans under Section 2.11, or if the Borrower is required to pay any additional amount to any Lender or any Tribunal for the account of any Lender pursuant to Section 2.19, then such Lender shall use reasonable efforts to designate a different lending office for funding or booking its Loans hereunder, assign its rights and obligations hereunder to another of its offices, branches or affiliates, or otherwise modify its practices relating to the Loans, if, in the reasonable judgment of such Lender, such designation, assignment or modification (i) would eliminate or reduce amounts payable pursuant to Section 2.10 or 2.19 or eliminate any unlawfulness contemplated by Section 2.11 with respect to LIBOR Loans, as the case may be, in the future and (ii) is not otherwise materially disadvantageous to such Lender.

(b) If any Lender requests compensation under Section 2.10 or gives notice regarding Regulatory Changes affecting LIBOR Loans under Section 2.11, or if the Borrower is required to pay any additional amount to any Lender or any Tribunal for the account of any Lender pursuant to Section 2.19, or if any Lender becomes a Defaulting Lender or if any Lender does not consent to any proposed amendment, supplement, modification, consent or waiver of any provision of this Agreement or any other Loan Paper that requires the consent of each of the Lenders or each of the Lenders affected thereby (so long as the consent of the Majority Lenders has been obtained), then the Borrower may, at its sole expense and effort (except in the case of a Defaulting Lender), upon notice to such Lender and the Administrative Agent, require such Lender to assign and delegate, without recourse (in accordance with and subject to the restrictions contained in Section 10.18), all its interests, rights and obligations under this Agreement to an assignee that shall assume such obligations (which assignee may be another Lender, if a Lender accepts such assignment); provided that (i) the Borrower shall have received the prior written consent of the Administrative Agent, which consent shall not unreasonably be withheld, (ii) such Lender shall have received payment of an amount equal to the outstanding

principal of its Loans, accrued interest thereon, accrued fees and all other amounts payable to it hereunder, from the assignee (to the extent of such outstanding principal and accrued interest and fees) or the Borrower (in the case of all other amounts) and (iii) in the case of any such assignment resulting from a claim for compensation under Section 2.10 or payments required to be made pursuant to Section 2.19, such assignment will result in a reduction in such compensation or payments. A Lender shall not be required to make any such assignment and delegation if, prior thereto, as a result of a waiver by such Lender or otherwise, the circumstances entitling the Borrower to require such assignment and delegation cease to apply. Each party hereto agrees that an assignment required pursuant to this clause may be effected pursuant to an Assignment and Assumption executed by the Borrower, the Administrative Agent and the assignee and that the Lender required to make such assignment need not be a party thereto.

2.22 Extensions of Loans.

(a) Notwithstanding anything to the contrary in this Agreement, pursuant to one or more offers (each, an “Extension Offer”) made from time to time by the Borrower to all Lenders, in each case on a pro rata basis (based on the aggregate outstanding principal amounts of the Loans with a like maturity date) and on the same terms to each such Lender, the Borrower is hereby permitted to consummate from time to time transactions with individual Lenders that accept the terms contained in such Extension Offers to extend the maturity date of each such Lender’s Loans and otherwise modify the terms of such Loans pursuant to the terms of the relevant Extension Offer (including by increasing the interest rate payable in respect of such Loans) (each, an “Extension,” and each Loan, as so extended, as well as the original Loan (in each case not so extended), being a “tranche”; and any Extended Loans shall constitute a separate tranche of Loans from the tranche of Loans from which they were converted), so long as the following terms are satisfied:

(i) no Default or Event of Default shall have occurred and be continuing at the time the offering document in respect of an Extension Offer is delivered to the Lenders.

(ii) except as to interest rates, amortization, and final maturity (which shall be determined by the Borrower and set forth in the relevant Extension Offer), the Loans of any Lender that agrees to an Extension with respect to such Loans (“Extended Loans”), shall be a Loan with the same terms (or terms not less favorable to existing Lenders) as the original Loans; provided that all repayments (except for (A) payments of interest at different rates on Extended Loans, (B) repayments required upon the maturity date of the non-extending Loans and (C) repayments made in connection with a prepayment) of Extended Loans after the applicable Extension date shall be made on a pro rata basis with all other Loans and (z) at no time shall there be Loans hereunder (including Extended Loans and any original Loans) that have more than two different maturity dates.

(iii) all documentation in respect of such Extension shall be consistent with the foregoing and

(iv) any applicable Minimum Extension Condition shall be satisfied.

(b) With respect to all Extensions consummated by the Borrower pursuant to this Section 2.22, (i) such Extensions shall not constitute voluntary or mandatory payments or prepayments for purposes of Section 2.9 or 2.13 and (ii) the Borrower shall specify as a condition (a “Minimum Extension Condition”) to consummating any such Extension that a minimum amount (except as provided below, to be determined and specified in the relevant Extension Offer in the Borrower’s sole discretion and waivable by the Borrower) of Loans of any or all applicable tranches be tendered; provided, that, in any event, the Minimum Extension Condition shall require that, after giving effect to a particular Extension, a majority of the aggregate Loans outstanding shall constitute Extended Loans pursuant thereto, and such requirement may not be waived by the Borrower. The Administrative Agent and the Lenders hereby consent to the transactions contemplated by this Section 2.22 (including, for the avoidance of doubt, payment of any interest, fees or premium in respect of any Extended Loans on such terms as may be set forth in the relevant Extension Offer) and hereby waive the requirements of any provision of this Agreement (including Sections 2.9 and 2.13) or any other Loan Paper that may otherwise prohibit any such Extension or any other transaction contemplated by this Section 2.22.

(c) No consent of any Lender or the Administrative Agent shall be required to effectuate any Extension, other than the consent of each Lender agreeing to such Extension with respect to its Loans (or a portion thereof). Notwithstanding anything to the contrary in this Agreement, the Lenders hereby irrevocably authorize the Administrative Agent to enter into amendments to this Agreement and the other Loan Papers with the Borrower as may be necessary in order to establish new tranches or sub-tranches in respect of Loans and such technical amendments as may be necessary or appropriate in the reasonable opinion of the Administrative Agent and the Borrower in connection with the establishment of such new tranches or sub-tranches, in each case on terms consistent with this Section 2.22.

(d) In connection with any Extension, the Borrower shall provide the Administrative Agent at least five Business Days’ (or such shorter period as may be agreed by the Administrative Agent) prior written notice thereof, and shall agree to such procedures (including regarding timing, rounding and other adjustments and to ensure reasonable administrative management of the credit facilities hereunder after such Extension), if any, as may be established by, or acceptable to, the Administrative Agent, in each case acting reasonably to accomplish the purposes of this Section 2.22.

2.23 Change of Control. If a Change of Control shall occur, the Borrower shall, within ten days after the occurrence thereof, give each Lender notice thereof, which notice shall describe in reasonable detail the facts and circumstances giving rise thereto and shall specify an Optional Termination Date for purposes of this Section (the “Optional Termination Date”), which date shall not be less than 30 nor more than 60 days after the date of such notice. Each Lender may, by notice to the Borrower and the Administrative Agent given not less than three Business Days prior to the Optional Termination Date, declare the Loan held by it (together with accrued interest thereon) and any other amounts payable hereunder for its account to be, and

such Loan and such other amounts shall thereupon become, due and payable without presentment, demand, protest or other notice of any kind, all of which are hereby waived by the Borrower, in each case effective on the Optional Termination Date (each Lender giving such notice, an “Exiting Lender”; each other Lender a “Non-Exiting Lender”). Notwithstanding the foregoing, if any condition specified in Section 4.2 cannot be satisfied on the Optional Termination Date such Change of Control shall be deemed to be an Event of Default.

For the purpose of this Section, a “Change of Control” means:

(a) the acquisition of ownership, directly or indirectly, beneficially (within the meaning of the Exchange Act and the rules of the SEC thereunder as in effect on the date hereof) or of record, by any person (within the meaning of the Exchange Act and the rules of the SEC thereunder as in effect on the date hereof) or group (within the meaning of the Exchange Act and the rules of the SEC thereunder as in effect on the date hereof) of Capital Stock representing more than 50% of the aggregate ordinary voting power represented by the issued and outstanding Capital Stock of the Lumen, unless Lumen becomes a direct or indirect wholly-owned Subsidiary of a holding company (i.e., a parent company) and the direct or indirect holders of Capital Stock of such holding company immediately following that transaction are substantially the same as the holders of the Borrower’s Capital Stock (and in the same proportion) immediately prior to that event;

(b) occupation of a majority of the seats (other than vacant seats) on the Board of Directors of Lumen by persons who (i) were not members of the Board of Directors of Lumen on the Closing Date and (ii) whose election to the Board of Directors of Lumen or whose nomination for election by the stockholders of Lumen was not approved by a majority of the members of the Board of Directors of Lumen then still in office who were either members of the Board of Directors on the Closing Date or whose election or nomination for election was previously so approved; or

(c) Lumen shall fail to own, directly or indirectly, 100% of the outstanding voting securities ordinarily having the right to vote for the election of directors of the Borrower.

SECTION 3

REPRESENTATIONS AND WARRANTIES.

The Borrower represents and warrants to the Administrative Agent and the Lenders as follows:

3.1 Purpose of Credit Facility; Federal Regulation.

The proceeds of the Loans shall be used for the working capital needs and general corporate purposes of the Companies. The proceeds loaned hereunder will not be used directly or indirectly for any purpose which violates, or which would be inconsistent with, the provisions of the Regulations of the Board, including Regulations T, U or X, or any other applicable Law. No Company is engaged in or will engage, principally or as one of its important activities, in the

business of extending credit to others for the purpose of purchasing or carrying any Margin Stock.

3.2 Corporate Existence, Good Standing, and Authority.

(a) Each Company is, to the best of the Borrower's knowledge, duly organized, validly existing, and in good standing under the Laws of its jurisdiction of organization (such jurisdictions with respect to existing Guarantor Significant Subsidiaries, being identified on Schedule 3.3 and, with respect to future Guarantor Significant Subsidiaries, being identified in the quarterly reporting as required by Section 5.3(k)).

(b) Except where failure would not reasonably be expected to have a Material Adverse Effect, each Company (i) is duly qualified to transact business and is in good standing as a foreign corporation or other organization in each jurisdiction where the nature and extent of its business and properties require the same, and (ii) possesses all requisite authority, power, licenses, permits, and franchises to own and operate its property and to conduct its business as is now being, or is contemplated herein to be, conducted.

(c) Each Loan Party possesses all requisite authority, power, licenses, permits, and franchises to execute, deliver, and comply with the terms of the Loan Papers to which it is a party, and, in the case of the Borrower, to obtain extensions of credit hereunder. Each Loan Party has taken all necessary corporate action to authorize the execution, delivery and performance of the Loan Papers to which it is a party and, in the case of the Borrower, to authorize the extensions of credit on the terms and conditions of this Agreement, except where failure, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

(d) No consent or authorization of, filing with, notice to or other act by or in respect of any Person or Tribunal is required in connection with this Agreement, the extensions of credit hereunder or with the execution, delivery, performance, validity or enforceability of this Agreement or any of the Loan Papers, except consents, authorizations, filings and notices (i) which have been obtained or made and are in full force and effect or (ii) the failure of which to obtain or make, would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

3.3 Guarantor Significant Subsidiaries.

Except as provided in the last sentence of this Section, Schedule 3.3 sets forth all existing Guarantor Significant Subsidiaries of the Borrower and correctly lists, as to each Guarantor Significant Subsidiary, (a) its name and (b) its jurisdiction of organization. Except as provided in the last sentence of this Section, the shares of Capital Stock of each Guarantor Significant Subsidiary owned by the Borrower (either directly or indirectly through another Subsidiary) as set forth on Schedule 3.3 are the duly authorized, validly issued, fully paid, and nonassessable shares of such Guarantor Significant Subsidiary and are owned by the Borrower free and clear of all Liens except Permitted Liens. Any future Guarantor Significant Subsidiaries will be included in the quarterly reporting as required by Section 5.3(k).

3.4 Financial Statements; No Change.

(a) The Current Financials were prepared in accordance with GAAP and present fairly in all material respects the consolidated financial condition and the results of operations of the Companies as of, and for the periods ended, the dates thereof. There were no material (to the Companies taken as a whole) liabilities, direct or indirect, fixed or contingent, of any Company as of the date of the Current Financials which are required to be reflected in the Current Financials but are not reflected therein. No Company has incurred any material (to the Companies taken as a whole) liability, direct or indirect, fixed or contingent, between the dates of the Current Financials and the Closing Date, except in the ordinary course of business, such as in connection with acquisitions and financing activities.

(b) Since December 31, 2019 through the Closing Date, there has been no development or event that has had or could reasonably be expected to have a Material Adverse Effect.

3.5 Compliance with Laws, Charter, and Agreements.

No Company is, nor will the execution, delivery, performance, or observance of the Loan Papers cause any Company to be, in violation of any Laws, including the Patriot Act, or any Material Agreements to which it is a party, other than such violations which would not reasonably be expected to have a Material Adverse Effect. No Company is, nor will the execution, delivery, performance, or observance of the Loan Papers cause any Company to be, in violation of its bylaws, charter or other organizational or governing document.

3.6 Litigation.

As of the Closing Date, There are no actions, suits, proceedings or investigations at law or in equity or by or on behalf of any Tribunal or in arbitration now pending, or, to the knowledge of the Borrower, threatened in writing against the Borrower or any of its Subsidiaries or any business, property or rights of any such person (i) that involve any Loan Papers, to the extent that the applicable action, suit, proceeding or investigation is brought by the Borrower or any of its subsidiaries or (ii) that would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect, except for any action, suit or proceeding at law or in equity or by or on behalf of any Tribunal or in arbitration which has been disclosed in any of Lumen's Annual Report on Form 10K for the year ended December 31, 2019 or Lumen's Quarterly Report on Form 10Q for the fiscal quarter ended June 30, 2020. In any such matter disclosed in the Annual or Quarterly Report described above, as of the Closing Date, there has been no subsequent development which would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect.

3.7 Taxes.

All Tax returns of each Company required to be filed have been filed (or extensions have been granted) except where the failure to do so could not reasonably be expected to have a Material Adverse Effect, and except where the failure to do so could not reasonably be expected

to have a Material Adverse Effect, all Taxes imposed upon each Company which are shown to be due and payable thereon have been paid other than Taxes for which the criteria for Permitted Liens have been satisfied and Taxes being contested in good faith by proper proceedings and with respect to which such Company shall have, to the extent required by GAAP, set aside on its books adequate reserves.

3.8 Environmental Matters.

No Company's ownership of its assets violates any applicable Environmental Law, other than such violations which would not reasonably be expected to have a Material Adverse Effect. To the Borrower's knowledge, no investigation or review is pending or threatened by any Tribunal with respect to any alleged violation of any Environmental Law in connection with any Company's assets which could result in a Material Adverse Effect. None of any Company's assets have been used by such Company or, to the Borrower's knowledge, any other Person as a dump site for any Hazardous Substance except where such use would not reasonably be expected to have a Material Adverse Effect.

3.9 Employee Benefit Plans.

Except as would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect: (a) no Reportable Event has occurred during the past five years as to which any Company or any ERISA Affiliate was required to file a report with the PBGC; (b) no ERISA Event has occurred or is reasonably expected to occur; and (c) no Company nor any of its respective ERISA Affiliates has received any written notification that any Multiemployer Plan is in reorganization or has been terminated within the meaning of Title IV of ERISA. The Borrower represents and warrants as of the Restatement Effective Date and as of the Restatement Effective Date that the Borrower is not and will not be (1) an employee benefit plan subject to Title I of ERISA, (2) a plan or account subject to Section 4975 of the Code; (3) an entity deemed to hold "plan assets" of any such plans or accounts for purposes of ERISA or the Code; or (4) a "governmental plan" within the meaning of ERISA.

3.10 Properties; Liens.

Each Company has good and marketable title (except for Permitted Liens) to its property reflected on the Current Financials as being owned (except for (a) dispositions of property subsequent to the date of the Current Financials and prior to the Closing Date, in the ordinary course of business, (b) dispositions of property following the Closing Date, otherwise permitted hereunder and (c) except for defects in title that do not interfere with its ability to conduct its business as currently conducted or to utilize such properties and assets for their intended purposes and where the failure to have such title would not be reasonably expected to have, individually or in the aggregate, a Material Adverse Effect). Except for Permitted Liens, there is no Lien on any property of any Company, and the execution, delivery, performance, or observance of the Loan Papers will not require or result in the creation of any Lien other than Permitted Liens.

3.11 Investment Company Status.

No Loan Party is an “investment company” within the meaning of the Investment Company Act of 1940, as amended.

3.12 Transactions with Affiliates.

As of the Closing Date, except as disclosed on Schedule 3.12, no Company is a party to a material transaction with any of its Affiliates in violation of Section 6.6. For purposes of this Section 3.12, “material” shall have the meaning set forth in Section 6.6.

3.13 Leases.

All material leases under which any Company is lessee or tenant are in full force and effect, and no default or potential default exists thereunder which could result in a Material Adverse Effect.

3.14 Labor Matters.

There are no actual or, to the Borrower’s knowledge, threatened strikes, labor disputes, slow-downs, walkouts, or other concerted interruptions of operations by any Company’s employees, the effect of which would have a Material Adverse Effect.

3.15 Insurance.

Each Company maintains with financially sound insurance companies or associations (or, as to workers’ compensation or similar insurance, with an insurance fund or by self-insurance authorized by the jurisdictions in which it operates) insurance concerning its properties and businesses against such casualties and contingencies and of such types and in such amounts (and with co-insurance and deductibles) as is customary in the case of same or similar businesses; provided, however, a program of self-insurance in such amounts and against such risks as are prudent and which is consistent with accepted business practice shall constitute compliance with this Section 3.15.

3.16 Solvency.

The Companies, collectively, are, and after giving effect to the transactions contemplated under the Loan Papers will be, Solvent.

3.17 Business.

The business of the Borrower as conducted on the Closing Date, is set forth on Schedule 3.17.

3.18 General.

All writings exhibited or delivered to the Administrative Agent by or on behalf of any Company are and will be genuine and in all material respects what they purport and appear to be.

3.19 No Default.

No Company is in default under or with respect to any Material Agreement to which it is a party in any respect that could reasonably be expected to have a Material Adverse Effect. On each date on which an extension of credit is made hereunder, no Default or Event of Default shall have occurred and be continuing or would result from the making of such extension of credit.

3.20 Anti-Corruption Laws and Sanctions.

(a) Neither the Borrower nor any Subsidiary, nor any director or officer of the Borrower, nor, to the knowledge of the Borrower, any employee, agent or affiliate of the Borrower or any Subsidiary of the Borrower, nor any director or officer of any Subsidiary, is the subject of Sanctions or in violation of any Anti-Corruption Laws;

(b) neither the Borrower nor any Subsidiary is located, organized or resident in a Sanctioned Country; and

(c) no part of the proceeds of the Loans shall be used, directly or indirectly, in a manner that would result in a violation of Anti-Corruption Laws or Sanctions by any party hereto.

3.21 Beneficial Ownership.

As of the Closing Date, the information included in the Beneficial Ownership Certification, if applicable, is true and correct in all material respects.

SECTION 4

CONDITIONS PRECEDENT.

4.1 Closing Date.

The occurrence of the Closing Date is subject to the receipt by the Administrative Agent of all of the following in form and substance satisfactory to the Administrative Agent and its special counsel:

(a) Loan Papers. (i) This Agreement, executed and delivered by the Administrative Agent and the Borrower, (ii) a Note payable to each Lender and (iii) the Current Financials.

(b) Secretary's Certificates. A certificate dated as of the date hereof, substantially in the form of Exhibit F, executed and delivered by each Loan Party, certifying that (i) attached is a true, correct, and complete copy of (A) such Loan Party's charter, certified by the appropriate state official and dated a Current Date, (B) such Loan Party's bylaws, and (C) resolutions of such Loan Party's board of directors authorizing the execution and delivery of each Loan Paper to which such Loan Party is a party and (ii) the officers whose specimen

signatures appear on such certificate hold the corporate office indicated and are authorized to sign agreements, documents, and instruments on behalf of such Loan Party.

(c) Good Standing, Existence, and Authority. Certificates (dated a Current Date) relating to each Loan Party's existence, good standing, and authority to transact business issued by appropriate state officials.

(d) Opinions of Borrower's Counsel. The favorable opinions, dated the Closing Date and substantially in the form of Exhibit B, of:

(i) Jones Walker LLP, special counsel to the Borrower;

(ii) Stacey Goff, Executive Vice President, General Counsel and Corporate Secretary of the Borrower; and

(iii) Arthur J. Saltarelli, Vice President, Deputy General Counsel and Assistant Secretary of the Borrower.

(e) Officer's Certificate. A certificate, dated the Closing Date and signed by the President, a Vice President or a Financial Officer of the Borrower, confirming compliance, as of the Closing Date, with the conditions set forth in paragraphs (a) and (b) of Section 4.2.

(f) Fees and Expenses. Payment from the Borrower of all fees then due the Administrative Agent, the Lead Arranger, the Lenders, and counsel to the Lead Arranger and Administrative Agent pursuant to this Agreement or any other agreement.

(g) Financial Statements. The Lenders shall have received (i) audited consolidated financial statements of the Borrower and its Subsidiaries for the 2018 and 2019 fiscal years.

(h) Solvency Certificate. The Lenders shall have received a certificate from the chief financial officer of the Borrower certifying that each Loan Party is, and after giving effect to this Agreement and the incurrence of all Debt and obligations being incurred in connection herewith, will be and will continue to be, Solvent.

(i) Ratings. The Borrower shall have obtained Senior Unsecured Long-Term Debt Ratings from each of Moody's and S&P.

(j) Anti-Corruption, Sanctions and Beneficial Ownership. The Lenders shall have received, with respect to such documents and other information requested in writing at least five business days prior to the Closing Date, with requirements of Anti-Corruption Laws and Sanctions and (B) if the Borrower qualifies as a "legal entity customer" under the Beneficial Ownership Regulation, a Beneficial Ownership Certification.

(k) Other. Such other agreements, documents, instruments, opinions, certificates, and evidences as the Administrative Agent may reasonably request.

4.2 Conditions to Funding.

In addition, the Lenders will not be obligated to fund the Loans unless at the time of such funding (a) the representations and warranties made in the Loan Papers are true and correct in all material respects at such time (except that (i) any representations and warranties that speak to a specific date shall be true and correct in all material respects as of such specific date and (ii) any representations and warranties that are qualified by “Material Adverse Effect” or other materiality language shall be true and correct in all respects at such time), (b) no Default or Event of Default shall have occurred and shall be continuing, (c) the funding of such Loans are permitted by Law, and (d) if requested by the Administrative Agent or the Majority Lenders, the Borrower shall have delivered to the Administrative Agent evidence substantiating any of the matters contained in this Agreement which are necessary to enable the Borrower to qualify for such Loans.

The borrowing of the Loans on the Closing Date by the Borrower hereunder shall constitute a representation and warranty by the Borrower as of the Closing Date that the conditions contained in this Section 4.2 shall have been satisfied.

4.3 Materiality of Conditions.

Each condition precedent herein is material to the transactions contemplated herein, and time is of the essence in respect of each thereof.

4.4 Waiver of Conditions.

Subject to the provisions of Section 10.14, the Majority Lenders may elect to fund the Loans without all conditions being satisfied.

SECTION 5

AFFIRMATIVE COVENANTS.

So long as any Loan or other amount is owing to any Lender or the Administrative Agent hereunder, the Borrower covenants and agrees with the Administrative Agent and the Lenders as follows:

5.1 Use of Proceeds.

Proceeds of Loans advanced hereunder shall be used only as represented herein.

5.2 Books and Records.

Each Company shall maintain, in accordance with GAAP, proper and complete books, records, and accounts which are necessary to prepare the financial statements required to be delivered hereunder.

5.3 Items to be Furnished.

The Borrower shall cause the following to be furnished to the Administrative Agent and each Lender (through the Administrative Agent):

(a) Promptly after preparation, and no later than 90 days after the last day of each fiscal year of the Borrower, commencing with the fiscal year ending December 31, 2020, Financial Statements showing the consolidated financial condition and results of operations of the Companies as of, and for the year ended on, such last day, accompanied by (i) the opinion of independent public accountants of recognized national standing, based on an audit using generally accepted auditing standards, that such Financial Statements were prepared in accordance with GAAP and present fairly the consolidated financial condition and results of operations of the Companies (and such accountants shall indicate in a letter to the Administrative Agent, that during their audit no Default or Event of Default not already reported was discovered or, if such Default or Event of Default was discovered, the nature and period of existence thereof) and (ii) a Financial Report Certificate with respect to such Financial Statements.

(b) Promptly after preparation, and no later than 45 days after the last day of each of the first three quarters of each fiscal year of the Borrower (commencing with the fiscal quarter ending March 31, 2021), (i) Financial Statements showing the consolidated financial condition and results of operations of the Companies as of, and for the period from the beginning of the current fiscal year to, such last day, and (ii) a Financial Report Certificate with respect to such Financial Statements.

(c) Promptly after preparation, true copies of all regular and periodic reports, proxy statements and filings on Form 8-K furnished by or on behalf of any Company to stockholders generally or filed with the SEC; provided, however, that such reports, proxy statements, filings and other materials required to be delivered pursuant to this clause (d) shall be deemed delivered for purposes of this Agreement when posted to the website of the Borrower or the website of the SEC and written notice of such posting has been delivered to the Administrative Agent. However, only registration statements covering more than 2% of the Borrower's outstanding shares of common stock shall be required to be furnished unless specifically requested by the Administrative Agent.

(d) Promptly after any Responsible Officer of the Borrower obtains actual knowledge thereof, any Event of Default or Default, specifying the nature and extent thereof and the corrective action (if any) proposed to be taken with respect thereto.

(e) Promptly after any Responsible Officer of the Borrower obtains actual knowledge thereof, notice of the filing or commencement of, or any written threat or notice of intention of any person to file or commence, any action, suit or proceeding, whether at law or in equity or by or before any Tribunal or in arbitration, against any Company as to which an adverse determination is reasonably probable and which, if adversely determined, would reasonably be expected to have a Material Adverse Effect.

(f) Promptly after any Responsible Officer of the Borrower obtains actual knowledge thereof, notice of any other development specific to any Company that is not a matter

of general public knowledge and that has had, or would reasonably be expected to have, a Material Adverse Effect.

(g) Promptly after any Responsible Officer of the Borrower obtains actual knowledge thereof, notice of any ERISA Event that, together with all other ERISA Events that have occurred, would reasonably be expected to have a Material Adverse Effect.

(h) Promptly upon the Administrative Agent's or any Lender's reasonable request, such information (not otherwise required to be furnished under the Loan Papers) respecting the business affairs, assets, and liabilities of any Company, and any opinions, certifications, and documents, in addition to those mentioned herein.

(i) Intentionally Omitted.

(j) Intentionally Omitted.

(k) Concurrently with the delivery of any Financial Statements pursuant to clause (a) or (b) above, a list of the Guarantor Significant Subsidiaries as of the last day of the relevant fiscal period.

(l) Intentionally Omitted.

Financial statements, opinions of independent certified public accountants, other information and officers' certificates required to be delivered by the Borrower pursuant to Sections 3.4 and 5.3 shall be deemed to have been delivered if any of the following, to the extent applicable, are satisfied: (i) such financial statements satisfying the requirements of Sections 3.4 and 5.3 and related certificate satisfying the requirements of Section 5.3 are delivered to the Lenders by e-mail, (ii) the Borrower shall have timely filed such Form 10-Q or Form 10-K, satisfying the requirements of Section 5.3 as the case may be, with the SEC on "EDGAR" and shall have made such form and the related certificate satisfying the requirements of Section 5.3 available on the Investor Relations portion of its home page on the worldwide web (at the Closing Date located at <http://www.Lumen.com>, (iii) such financial statements satisfying the requirements of Section 5.3 are timely posted by or on behalf of the Company on SyndTrak Online, IntraLinks or on any other similar website to which each Lender has free access or (iv) the Borrower shall have filed any of the items referred to in Section 5.3 with the SEC on "EDGAR" and shall have made such items available on the Investor Relations portion of its home page on the worldwide web or if any of such items are timely posted by or on behalf of the Borrower on IntraLinks or on any other similar website to which each Lender has free access; provided, however, that upon request of any Lender, the Borrower will thereafter deliver written copies of such forms, financial statements, other information and certificates to such Lender.

5.4 Inspection.

The Borrower shall allow the Administrative Agent and each Lender, when the Administrative Agent or such Lender reasonably deems necessary, at such Lender's own expense if no Default then exists, to inspect any of its properties, to review reports, files, and other

records and to make and take away copies thereof, to conduct tests or investigations, and to discuss any of its affairs, conditions, and finances with any director, officer, or employee of any Company from time to time, upon reasonable notice during reasonable business hours, or otherwise when reasonably considered necessary.

5.5 Taxes.

The Borrower shall promptly pay, or cause to be paid, when due any Taxes of each Company, except those which if unpaid would not have a Material Adverse Effect, Taxes for which the criteria for Permitted Liens have been satisfied and Taxes being contested in good faith by proper proceedings and with respect to which the Borrower shall have, to the extent required by GAAP, set aside on its books, or caused to be set aside on the books of the relevant Company, adequate reserves. No Company shall use any proceeds of Loans to pay the wages of employees unless a timely payment to or deposit with the United States of America of all amounts of Tax required to be deducted and withheld with respect to such wages is also made.

5.6 Payment of Obligations.

Each Company shall promptly pay (or renew and extend) all of its material obligations as the same become due except those being contested in good faith by proper proceedings and with respect to which such Company shall have, to the extent required by GAAP, set aside on its books adequate reserves, but no Company will make any voluntary prepayment of the principal of any Funded Debt other than the Obligation, whether subordinate to the Obligation or not, if a Default or Event of Default exists under any Loan Paper.

5.7 Expenses.

The Borrower shall promptly pay (a) all reasonable and necessary out-of-pocket costs, fees, and expenses paid or incurred by the Administrative Agent incident to any Loan Paper (including, but not limited to, the reasonable fees and expenses of counsel to the Administrative Agent in connection with the syndication, negotiation, preparation, delivery, execution and administration of the Loan Papers and any related amendment, waiver, or consent); and (b) all reasonable and customary out-of-pocket costs, fees and expenses paid or incurred by the Administrative Agent and any of the Lenders in connection with the enforcement of the obligations of any Company or the exercise of any Rights (including, but not limited to, reasonable attorneys' fees and expenses and court costs), all of which shall be a part of the Obligation. This covenant shall survive the termination of this Agreement and the payment of the Loans and all other amounts payable hereunder.

5.8 Maintenance of Existence, Assets, Business, and Insurance.

Except as permitted by Section 6.4, each Company shall at all times (a) maintain its corporate existence and authority to transact business, (b) maintain its good standing in its jurisdiction of incorporation or organization and all other jurisdictions where the failure to so maintain could reasonably be expected to have a Material Adverse Effect, (c) maintain all licenses, permits, and franchises necessary for its business, where the failure to so maintain could

reasonably be expected to have a Material Adverse Effect, (d) keep all of its assets which are necessary to its business in good working order and condition (ordinary wear and tear excepted), and make all necessary repairs and replacements thereto, where the failure to so keep and repair could reasonably be expected to have a Material Adverse Effect, and (e) maintain either (i) insurance with such insurers, in such amounts, and covering such risks, as shall be ordinary and customary in the industry or (ii) a comparable self-insurance program.

5.9 Preservation and Protection of Rights.

Each Company shall perform such acts and duly authorize, execute, acknowledge, deliver, file, and record any additional agreements, documents, instruments, and certificates as the Administrative Agent may reasonably deem necessary or appropriate in order to preserve and protect the Rights of the Administrative Agent or the Lenders under any Loan Paper.

5.10 Environmental Laws.

Each Company shall conduct its business so as to comply with all applicable Environmental Laws and shall promptly take corrective action to remedy any non-compliance with any Environmental Law, except where failure to so comply or take such action would not reasonably be expected to have a Material Adverse Effect. Each Company shall maintain a system which, in its reasonable business judgment, will assure its continued compliance with Environmental Laws in all material respects.

5.11 Reserved.

5.12 Designation of Unrestricted Subsidiaries. The board of directors of the Borrower may at any time designate any Subsidiary as an Unrestricted Subsidiary or any Unrestricted Subsidiary as a Subsidiary; provided, that (a) immediately before and after such designation, no Default or Event of Default shall have occurred and be continuing, (b) immediately after giving effect to such designation, the Loan Parties shall be in compliance, on a pro forma basis, with the covenants set forth in Section 6.14 (and, as a condition precedent to the effectiveness of any such designation, the Borrower shall deliver to the Administrative Agent a certificate setting forth in reasonable detail the calculations demonstrating such compliance), (c) no Guarantor may be designated as an Unrestricted Subsidiary, (d) no Unrestricted Subsidiary may at any time Guaranty any Funded Debt of any Company and (e) no Unrestricted Subsidiary that has been designated as a Subsidiary may be subsequently designated as an Unrestricted Subsidiary. The designation of any Subsidiary as an Unrestricted Subsidiary shall constitute an Investment by the Borrower or the relevant Subsidiary therein at the date of designation in an amount equal to the net book value of such Person's investment therein. The designation of any Unrestricted Subsidiary as a Subsidiary shall constitute the incurrence at the time of designation of any Debt of such Subsidiary existing at such time.

5.13 Additional Guarantors. At any time after the Closing Date that the Borrower (a) obtains a Below Investment Grade Rating, or (b) fails to maintain compliance with Section 6.15, (1) any Guarantor Significant Subsidiary that is a Domestic Subsidiary, (2) any Person that becomes a Wholly Owned Subsidiary that is a Guarantor Significant Subsidiary after the

occurrence of the events described in clauses (a) or (b) above (which for purposes of this Section 5.13 shall exclude (w) any Excluded Regulated Subsidiary, (x) any person prohibited from incurring any guarantee obligations under any applicable financing obligations, (y) any Unrestricted Subsidiary and (z) any Excluded Specified Subsidiary, in each case unless such Subsidiary ceases to qualify as such), or (3) or any Company that either (i) enters into a Guaranty with respect to Funded Debt of the Borrower or (ii) becomes jointly and severally liable for the Funded Debt of the Borrower, the Borrower shall promptly cause such Guarantor Significant Subsidiary, Person or Company, as the case may be, to deliver to the Administrative Agent a Guarantee Agreement, satisfactory legal opinions and other documentation comparable to the documentation and legal opinions delivered on the Closing Date. Additionally, the Borrower may, in its sole discretion, add any Subsidiary as a Guarantor under this Agreement by causing such Subsidiary to comply with this Section 5.13.

5.14 Guarantor Release. If one or more Guarantors has entered into a Guarantee Agreement with respect to this Agreement (a) due to the receipt by the Borrower of a Below Investment Grade Rating and the Borrower subsequently obtains a Debt Rating of at least Baa3 (or the equivalent) by Moody's and a Debt Rating of at least BBB- (or the equivalent) by S&P and Fitch (in each case, with at least stable outlook), each Guarantor shall cease to be a Guarantor under this Agreement and any other Loan Papers (notwithstanding anything to the contrary herein) and the Borrower's obligations under Section 5.13 shall cease or (b) for any other reason and the Borrower subsequently obtains a Debt Rating of at least Baa3 (or the equivalent) by Moody's and a Debt Rating of at least BBB- (or the equivalent) by S&P and Fitch (in each case, with at least stable outlook), each Guarantor may, in the sole discretion of the Borrower, cease to be a Guarantor under this Agreement and any other Loan Papers (notwithstanding anything to the contrary herein) and the Borrower's obligations under Section 5.13 shall cease, provided that, in each case, at such time the Borrower is in compliance with Section 6.15(b).

5.15 CoBank Equity.

(a) So long as CoBank is a Lender hereunder, the Borrower will (a) maintain its status as an entity eligible to borrow from CoBank and (b) acquire equity in CoBank in such amounts and at such times as CoBank may require in accordance with CoBank's Bylaws and Capital Plan (as each may be amended from time to time), except that the maximum amount of equity that the Borrower may be required to purchase in CoBank in connection with the Loans made by CoBank may not exceed the maximum amount permitted by the Bylaws and the Capital Plan at the time this Agreement is entered into. The Borrower acknowledges receipt of a copy of (i) CoBank's most recent annual report, and if more recent, CoBank's latest quarterly report, (ii) CoBank's Notice to Prospective Stockholders and (iii) CoBank's Bylaws and Capital Plan, which describe the nature of all of the Borrower's cash patronage, stock and other equities in CoBank acquired in connection with its patronage loan from CoBank (the "CoBank Equities") as well as capitalization requirements, and agrees to be bound by the terms thereof.

(b) Each party hereto acknowledges that CoBank's Bylaws and Capital Plan (as each may be amended from time to time) shall govern (i) the rights and obligations of the

parties with respect to the CoBank Equities and any patronage refunds or other distributions made on account thereof or on account of the Borrower's patronage with CoBank, (ii) the Borrower's eligibility for patronage distributions from CoBank (in the form of CoBank Equities and cash) and (iii) patronage distributions, if any, in the event of a sale of a participation interest. CoBank reserves the right to assign or sell participations in all or any part of its Commitments or outstanding Loans hereunder on a non-patronage basis.

(c) Each party hereto acknowledges that CoBank has a statutory first lien pursuant to the Farm Credit Act of 1971 on all CoBank Equities that the Borrower may now own or hereafter acquire, which statutory lien shall be for CoBank's sole and exclusive benefit. Notwithstanding anything herein or in any other Loan Paper to the contrary, the CoBank Equities shall not constitute security for the Obligations due to any other Lender. To the extent that any of the Loan Papers create a Lien on the CoBank Equities or on patronage accrued by CoBank for the account of the Borrower (including, in each case, proceeds thereof), such Lien shall be for CoBank's sole and exclusive benefit and shall not be subject to pro rata sharing hereunder. Neither the CoBank Equities nor any accrued patronage shall be offset against the Obligations except that, in the event an Event of Default has occurred and is continuing, CoBank may elect, solely at its discretion, to apply the cash portion of any patronage distribution or retirement of equity to amounts owed to CoBank under this Agreement, whether or not such amounts are currently due and payable. The Borrower acknowledges that any corresponding tax liability associated with such application is the sole responsibility of the Borrower. CoBank shall have no obligation to retire the CoBank Equities upon any Event of Default, Default or any other default by the Borrower or any other Loan Party, or at any other time, either for application to the Obligations or otherwise.

5.16 Compliance with Anti-Corruption Laws, Sanctions. Each of the Companies shall, and shall cause each of its Subsidiaries, Affiliates, officers, directors, employees and agents to, comply with all applicable (i) Anti-Corruption Laws and (ii) Sanctions. The Borrower shall implement and maintain in effect policies and procedures designed to ensure compliance by the Loan Parties and their respective Subsidiaries, Affiliates, officers, directors, employees and agents with all applicable (i) Anti-Corruption Laws and (ii) Sanctions.

SECTION 6

NEGATIVE COVENANTS.

So long as any Loan or other amount is owing to any Lender or the Administrative Agent hereunder, the Borrower covenants and agrees with the Administrative Agent and the Lenders as follows:

6.1 Reserved.

6.2 Liens.

Neither the Borrower nor any of its Subsidiaries will create, incur or suffer or permit to be created or incurred or to exist any Lien (other than Permitted Liens) upon its assets unless the

Obligations then outstanding shall be secured by such Lien equally and ratably with any and all obligations and indebtedness secured by such Lien.

6.3 Restricted Payments.

The Borrower will not directly or indirectly make or declare any Restricted Payment unless no Default or Event of Default has occurred and is continuing or would result from such Restricted Payment.

6.4 Mergers and Consolidations.

No Company will merge or consolidate with any Person other than:

(a) any merger or consolidation where the Borrower (or another Company, if the Borrower is not a party thereto) is the surviving corporation;

(b) any merger of any Subsidiary into another Company;

(c) any merger of a Subsidiary into another Person (other than the Borrower) if after such merger the surviving entity becomes a Subsidiary;

(d) any sale of assets permitted by Section 6.7 that is structured as a merger or consolidation;

(e) any Subsidiary that is not a Guarantor Significant Subsidiary may liquidate or dissolve if the Borrower determines in good faith that such liquidation or dissolution is in the best interests of the Borrower and is not materially disadvantageous to the Lenders; and

(f) any Subsidiary may merge into any other Person to the extent the transaction constitutes an Investment permitted by Section 6.5; and

(g) any Subsidiary or any other person may be merged, amalgamated or consolidated with the Borrower or all or substantially all of the assets of the Borrower and its Subsidiaries taken as a whole may be Disposed of to any person, if the surviving person (or the person to whom all or substantially all of the assets of the Borrower and its Subsidiaries are disposed) (such other person, the “Successor Borrower”), (i) the Successor Borrower shall be an entity eligible to borrow from CoBank before and after giving effect to such merger, amalgamation or consolidation, (ii) the Successor Borrower shall be in the same, substantially similar or complimentary lines of business as the Companies after giving effect to such merger, amalgamation or consolidation, (iii) the Successor Borrower shall be an entity organized or existing under the laws of the United States, any state thereof or the District of Columbia, (iv) the Successor Borrower shall expressly assume all the obligations of the Borrower under this Agreement and the other Loan Papers pursuant to a supplement hereto or thereto in form reasonably satisfactory to the Administrative Agent, and (v) the Successor Borrower shall have delivered to the Administrative Agent (A) a certificate of a Responsible Officer stating that such merger, amalgamation or consolidation does not violate this Agreement or any other Loan Paper and that the Successor Borrower is in compliance with Section 6.14 on a pro forma basis after

giving effect to such merger, amalgamation or consolidation and (B) if requested by the Administrative Agent, an opinion of counsel to the effect that such merger, amalgamation or consolidation does not violate this Agreement or any other Loan Paper;

provided, that in any such case, immediately after such merger or consolidation, there shall not exist any Default or Event of Default.

6.5 Loans, Advances, and Investments.

Except as permitted by Section 6.4(b), no Company will make any loan, advance, extension of credit, or capital contribution to, make any investment in, or purchase or commit to purchase any stock or other securities or evidences of Debt of, or interests in, any other Person (all of the foregoing, “Investments”), other than:

(a) Investments as of the Closing Date;

(b) Acquisitions;

(c) expense accounts for and other loans and advances to directors, officers, and employees of such Company in the ordinary course of business not to exceed \$1,000,000 in the aggregate outstanding at any time;

(d) (i) investments in (or secured by) obligations of the United States of America and agencies thereof and obligations guaranteed by the United States of America maturing within one year from the date of acquisition; (ii) commercial paper rated A-2 or better by Moody's or P-2 or better by S&P; (iii) certificates of deposit, time deposits and banker's acceptances which are fully insured by the Federal Deposit Insurance Corporation or are issued by commercial banks organized under the Laws of the United States of America or any state thereof and having combined capital, surplus, and undivided profits of not less than \$100,000,000, and which certificates of deposit have one of the two highest ratings from Moody's or S&P, unless the Borrower has a written commitment to borrow funds from such commercial bank; (iv) repurchase agreements with a term of not more than 30 days for securities described in clause (i) above and entered into with a financial institution satisfying the criteria described in clause (iii) above; (v) in case of any Foreign Subsidiary, (A) marketable direct obligations issued by, or unconditionally guaranteed by, sovereign nation in which such Person is organized and is conducting business or issued by any agency of such sovereign nation and backed by full faith and credit of such sovereign nation, in each case maturing within one year from date of acquisition, so long as indebtedness of such sovereign nation is rated at least A by S&P, A2 by Moody's or A mid by Dominion Bond Rating Service Limited or carries an equivalent rating from a comparable foreign rating agency or (B) investments of type and maturity described in (ii) through (iv) above of foreign obligors, which investments or obligors have ratings described in such clauses or equivalent ratings from comparable foreign rating agencies;

(e) time deposits, banker's acceptances or certificates of deposit issued by any of the Lenders;

(f) investments having one of the two highest ratings from Moody's or S&P;

(g) extensions of credit in connection with trade receivables and overpayments of trade payables, in each case resulting from transactions in the ordinary course of business;

(h) (i) loans, investments and capital contributions from any Company to any other Company, provided that any such loans, investments and capital contributions from any Company to an Excluded Specified Subsidiary shall be (x) solely in the form of loans made in connection with cash management activities in the ordinary course of business and (y) transfers for accounting and tax planning purposes in the ordinary course of business and (ii) Guaranties by any Company of the Debt of any other Company, provided that neither the Borrower nor any of its Subsidiaries (other than the applicable Excluded Specified Subsidiary) shall guarantee Excluded Specified Debt;

(i) investments in the cash surrender value of life insurance policies issued by Persons with a financial rating from A.M. Best Company (as reported in Best's Insurance Reports) of at least A+; provided, however, that if such Person's financial rating is downgraded to less than A+, then within 90 days following such downgrading, either (i) such cash value life insurance policies will be transferred to another insurance company with a financial rating of at least A+, (ii) such cash value life insurance policies will be collapsed and the cash value thereof will be collected by the investing Company, or (iii) such investment will become an investment subject to the limitations of subparagraph (m) of this Section 6.5;

(j) the purchase of equity or debt securities of any Company, including the Borrower (but, in the case of equity securities of the Borrower, only to the extent permitted by Section 6.3);

(k) investments in Capital Stock or securities of or loans to or Guaranties of the Debt (including Permitted Priority Debt) of any Person engaged in the same or similar line of business as set forth on Schedule 3.17 hereto (or any reasonable extensions or expansions thereof) (i) in which a Company possesses (or will possess after such investment) an equity ownership interest in such Person or (ii) secured by the Borrowers interest in such business;

(l) in the ordinary course of business, investments in the Capital Stock of the Rural Telephone Bank, CoBank, or the National Rural Utilities Cooperative Finance Corporation, or any other lender from whom the investing Company is intending to borrow money which requires such Company to make an equity investment in such lender in order to so borrow;

(m) Guaranties of the Debt of the Borrower's employee stock ownership plan;

(n) investments in readily marketable money market funds registered under the Investment Company Act of 1940 with an investment policy to hold at least 90% of its assets in cash and securities of a type described in subsections (d), (e) and (f) of this Section 6.5;

(o) investments received in connection with the bankruptcy or reorganization of, or settlement of delinquent accounts and disputes with, customers and suppliers, in each case in the ordinary course of business;

(p) investments consisting of non-cash consideration with respect to the sale of assets permitted by Section 6.7;

(q) any acquisition of stock or assets to the extent that the consideration is paid in the Capital Stock of the Borrower;

(r) (i) interest rate swap agreements, interest rate cap agreements, interest rate collar agreements or other similar agreements or arrangements, (ii) foreign exchange contracts, currency swap agreements, futures contracts, option contracts, synthetic caps or other similar agreements or arrangements, in each case designed to hedge against fluctuations in interest rates or currency values, respectively, or (iii) collars, caps, spreads and other similar agreements or arrangements, in each case designed to hedge against the total cost and consideration for the conversion of equity linked Debt;

(s) acquisition of in-region wirelines as part of capital expenditures program; and

(t) any loans, advances, Guaranties, and investments which never exceed in the aggregate at any time 25% of Adjusted Consolidated Net Worth (valued on the basis of original cost, plus subsequent cash and stock additions, less any write-down in value), net of any cash return representing return of capital in respect of any such investment or any cash repayment of any such loans, advances or Guarantees (to the extent funded); provided, however, that the aggregate amount at any time of such loans or advances to, Guaranties of, or investments in any joint venture that is not a Domestic Person, including any such joint venture that qualifies as a Subsidiary, shall not exceed \$750,000,000 (valued on the basis of original cost, plus subsequent cash and stock additions, less any write-down in value), net of any cash return representing return of capital in respect of any such investment or any cash repayment of any such loans or advances or Guarantees (to the extent funded);

provided, that this Section 6.5 shall not restrict the investment by any Company of assets held or managed under any Plan.

6.6 Transactions with Affiliates.

No Company will enter into any material transaction with any of its Affiliates, provided, however, that: (a) any Company may enter into any transaction, including a material transaction, with any of its Affiliates if, after giving pro forma effect to such transaction, the Borrower is in compliance with Section 6.14 and no other Default or Event of Default has occurred or is continuing; and further provided, that (b) any Company may enter into any of the following transactions with any of its Affiliates, including material transactions: (i) transactions between or among entities each of which is either the Borrower or a Wholly Owned Subsidiary (other than an Excluded Specified Subsidiary), in the case of a transaction between (x) the Borrower and a

Subsidiary (other than an Excluded Specified Subsidiary) that is not a Wholly Owned Subsidiary, (y) Subsidiaries (other than Excluded Specified Subsidiaries) one or both of which is not a Wholly Owned Subsidiary, or (z) between Excluded Specified Subsidiaries, provided that, in the case of each of (x), (y) and (z) as applicable, the Borrower has determined that such transaction is in the best interests of the Borrower, (ii) in the case of any other transaction between a Company and either (x) a Person that is not a Company (and such transaction is in the ordinary course of business) or (y) an Excluded Specified Subsidiary, and such transaction is upon fair and reasonable terms not materially less favorable than such Company could obtain or could become entitled to in an arm's-length transaction with a Person that was not its Affiliate, (iii) the incurrence of Debt by an Excluded Specified Subsidiary from the Borrower or a Subsidiary, (iv) material transactions otherwise permitted under this Agreement, (v) in the case of any other transaction between a Company and a Person that is not a Company, such transaction is upon fair and reasonable terms not materially less favorable than such Company could obtain or become entitled to in an arm's length transaction with a person that was not its Affiliate (as determined in good faith by the Board of Directors), (vi) transactions undertaken in good faith (as certified by an officer of the Borrower) for the purpose of improving consolidated tax efficiency of Lumen and its direct or indirect subsidiaries and not for the purpose of circumventing any covenant set forth in this Section 6.6, and (vii) an MTE Transaction, so long as (x) no Default or Event of Default has occurred or is continuing and (y) the MTE Subsidiary does not account for more than 25% of Consolidated EBITDA of the Borrower; and further provided that (c) the covenants in this Section 6.6 shall not apply to any transaction between a Company and an Affiliate that is an Affiliate of the Company solely by virtue of the Company's ownership interest in such Affiliate, so long as no other Affiliate that is not also a Company owns any interests in such Affiliate. For purposes of this Section 6.6, such transactions are "material" if they individually require any Company to pay more than the greater of \$250,000,000 or 1% of Consolidated Net Worth over the course of such transactions.

6.7 Sale of Assets.

No Company will sell, lease, or otherwise Dispose of all or any substantial part of its assets (including a sale by merger of a Subsidiary with or into another Person) other than:

- (a) sales of inventory or investments permitted under Section 6.5(d), (e), (f) and (n) in the ordinary course of business;
- (b) sales of equipment for a fair and adequate consideration or disposal of obsolete or worn out equipment; provided, that if any such equipment is sold or otherwise Disposed of and a replacement is necessary for the proper operation of the business of such Company, such Company will replace such equipment with adequate equipment;
- (c) the exchange of assets for assets in a Permitted Line of Business (including securities of an entity that owns assets) of equal or greater value;
- (d) the sale, discount, or transfer of delinquent notes or accounts receivable in the ordinary course of business for purposes of collection;

(e) sales of accounts receivable and related assets or an interest therein of the type specified in the definition of “Qualified Receivables Transaction” made in connection with a Qualified Receivables Transaction (provided that if at any time the aggregate principal amount of all Qualified Receivables Transactions exceeds \$150,000,000, the Borrower shall prepay the Loans and/or reduce the Total Commitments under and as defined in the Revolving Credit Agreement by the amount of such excess);

(f) sales of assets from one Company to another Company;

(g) Dispositions of assets pursuant to sale and leaseback transactions so long as, after giving effect thereto and the use of proceeds thereof, the aggregate outstanding amount of Attributable Debt of the Companies shall not exceed the greater of \$250,000,000 or 1% of Consolidated Tangible Assets;

(h) other Dispositions of assets (other than (i) accounts receivable and related assets or (ii) in connection with sale and leaseback transactions); provided, that the Companies shall, within the period of 365 days following the consummation of each such transaction, apply (or cause to be applied) an amount equal to the Net Cash Proceeds of such disposition of assets to either (x) make Eligible Reinvestments or (y) prepay the Loans and/or reduce the Total Commitments under and as defined in the Revolving Credit Agreement;

(i) to the extent not already permitted by another subsection of this Section 6.7, sales, transfers and other Dispositions of assets (other than (i) accounts receivable and related assets or (ii) in connection with sale and leaseback transactions) that are not permitted by clauses (a) through (h) above; provided, that the cumulative consideration for all assets sold, transferred or otherwise Disposed of in reliance on this clause (i) shall not exceed \$200,000,000 or 2 ½ % of the Consolidated Total Assets of the Companies (measured as of the last day of the most recent fiscal quarter for which the relevant financial information is available), whichever is greater, in the aggregate, net of Eligible Reinvestments;

(j) leases, licenses or subleases or sublicenses of any Real Property or personal property in the ordinary course of business; and

(k) Dispositions of inventory or Dispositions or abandonment of intellectual property of the Borrower and its Subsidiaries determined in good faith by the management of the Borrower to be no longer economically practicable to maintain or useful or necessary in the operation of the business of the Borrower or any of the Subsidiaries.

6.8 Compliance with Laws and Documents; Use of Proceeds.

(a) No Company will violate the provisions of any Laws or any Material Agreement if such violation alone, or when aggregated with all other such violations, could reasonably be expected to have a Material Adverse Effect. No Company will violate the provisions of its charter or bylaws or modify, repeal, replace, or amend any provision of its charter or bylaws if such action could reasonably be expected to have a Material Adverse Effect. The Borrower will

provide to the Administrative Agent a copy of each document that materially modifies, repeals, replaces, or amends the charter or bylaws of the Borrower.

(b) The Borrower will not request any Borrowing, and the Borrower shall not use, and shall ensure that its Subsidiaries and its or their respective directors, officers, employees and agents shall not use, the proceeds of any Borrowing, whether directly or indirectly, in violation of Anti-Corruption Laws, Sanctions or other applicable Law.

6.9 New Businesses.

No Company will engage in any material business other than the businesses in which it is presently engaged or businesses similar, complimentary or related thereto, as described on Schedule 3.17; provided, that the Borrower and its Subsidiaries may engage in lines of business not described on Schedule 3.17 to the extent the aggregate value of assets contributed to such lines of business, at the time of such contribution, does not exceed 10% of Consolidated Tangible Assets as of the end of any final quarter for which Financial Statements of the Borrower and its Subsidiaries are available.

6.10 Assignment.

No Loan Party will assign or transfer any of its Rights, duties, or obligations under any of the Loan Papers.

6.11 Fiscal Year.

The Borrower will not change its fiscal year without the prior written consent of the Administrative Agent (which shall not be unreasonably withheld).

6.12 Investment Company Status.

No Loan Party will conduct its business in such a way that it will become (a) a “public utility” within the meaning of the Federal Power Act, as amended, (b) an “investment company” within the meaning of the Investment Company Act of 1940, as amended, or (c) an “investment adviser” within the meaning of the Investment Advisers Act of 1940, as amended.

6.13 Anti-Corruption and Sanctions.

(a) None of the Companies or their respective Subsidiaries, Affiliates, officers, directors, employees or agents will engage in any dealings or transactions with any Sanctioned Person or in violation of any applicable Anti-Corruption Laws or Sanctions.

(b) No Company will fund all or any part of any payment under this Agreement or any other Loan Paper out of proceeds derived from transactions that violate Sanctions, or with any Sanctioned Person, or with or connected to any Sanctioned Country.

6.14 Financial Covenants.

(a) As calculated at the end of each fiscal quarter of the Borrower (but computed with respect to EBITDA for the four fiscal quarters ending on the last day of such fiscal quarter), the Borrower shall not permit the ratio of Consolidated Total Funded Debt to Consolidated EBITDA of the Companies to exceed 2.85 to 1.0.

(b) As calculated at the end of each fiscal quarter of the Borrower (but computed for the four fiscal quarters ending on the last day of such fiscal quarter), the Borrower shall not permit the ratio of Consolidated EBITDA of the Companies to the sum of (i) consolidated interest expense of the Companies (less any non-cash amounts attributable to amortization of financing costs paid in a previous period) and (ii) dividends declared or paid by any Company (other than to another Company) on its preferred Capital Stock (but if such dividends are declared and paid during such four-quarter period, the amount shall not be counted twice) to be less than 1.50 to 1.0.

For purposes of this Section 6.14(b), Consolidated EBITDA and interest expense of any Subsidiary which is subject to any Subsidiary Encumbrance, shall be reduced to the extent such Subsidiary is restricted by the Subsidiary Encumbrance. As used in this Section 6.14(b), "Subsidiary Encumbrance" shall mean, so long as a default has occurred and is continuing under the agreement creating such encumbrance or restriction, any encumbrance or restriction on the ability of any Subsidiary to (i) pay dividends or make any other distributions on its Capital Stock or any other interest or participation in its profits owned by the Borrower or any Subsidiary of the Borrower, or pay any Debt owed to the Borrower or a Subsidiary of the Borrower, (ii) make loans or advances to the Borrower or any of the Borrower's Subsidiaries or (iii) transfer any of its properties or assets to the Borrower, except for such encumbrances or restrictions (A) existing on the Closing Date (or any Permitted Refinancing Debt with respect thereto so long as such encumbrances or restrictions are no more restrictive than those contained in the debt being refinanced), (B) arising in connection with loans made to any Company by the Rural Electrification Administration, the Rural Utilities Service, the Rural Telephone Bank, or similar lenders such as the Rural Telephone Finance Cooperative, or (C) now existing or hereafter arising under or by reason of either (x) applicable Law or (y) this Agreement and the other Loan Papers.

Further, for purposes of this Section 6.14, Consolidated Total Funded Debt shall include any Company's Guaranty of Funded Debt of any Person other than another Company or the Borrower's employee stock ownership plan. For the first four quarters following any Acquisition, calculations under this Section 6.14 shall be made on a pro forma basis as if the properties acquired in connection with such Acquisition were properties of the Companies during the period of calculation. For the avoidance of doubt, Excluded Specified Subsidiaries are to be included for the purposes of calculating the financial covenants set forth in this Section 6.14.

6.15 Priority Debt.

(a) At all times occurring after the Closing Date that Guarantors are required to provide Guarantee Agreements pursuant to Section 5.13 but prior to the time that the Guarantors are permitted to be released from their Guarantee Agreements pursuant to Section 5.14, the Borrower shall not at any time permit the aggregate principal amount (without

duplication) of (i) all Funded Debt of the Borrower or any of its Subsidiaries secured by Liens permitted by clause (b), (c), (j), (k), (r) (to the extent such Liens are incurred pursuant to clause (r) by a Loan Party in favor of a party that is not a Loan Party), (s) (to the extent replacing a Lien permitted pursuant to a different clause of the definition of “Permitted Liens” listed in this Section 6.15(a)), (t), (w), (x), (y) or (aa) of the definition of “Permitted Liens” plus (ii) all Funded Debt of Subsidiaries of the Borrower, whether or not secured (in the case of both clause (i) (other than Debt of Guarantors) and clause (ii), other than any Permitted Priority Debt) to exceed 15% of Consolidated Tangible Assets determined as of the end of the most recent fiscal quarter for which Financial Statements of the Borrower and its Subsidiaries are available.

(b) In the event that the Guarantors are permitted to be released from their Guarantee Agreements pursuant to Section 5.14, the Borrower shall not at any time thereafter permit the aggregate principal amount (without duplication) of (i) all Funded Debt of the Borrower or any of its Subsidiaries secured by Liens permitted by clause (b), (c), (j), (k), (r) (to the extent such Liens are incurred pursuant to clause (r) by a Loan Party in favor of a party that is not a Loan Party), (s), (t), (w), (x), (y) or (aa) of the definition of “Permitted Liens” plus (ii) all Funded Debt of Subsidiaries of the Borrower, whether or not secured, to exceed 20% of Consolidated Tangible Assets determined as of the end of the most recent fiscal quarter for which Financial Statements of the Borrower and its Subsidiaries are available; provided that if the Borrower fails to meet its obligations under clause (i) and clause (ii) of this Section 6.15(b), it shall have the right, by notice to the Administrative Agent, to reinstate as Guarantors all Persons then constituting Guarantors as defined herein (and thereafter Section 5.13 shall again be in effect), at which time it shall no longer have to comply with its obligations under clause (i) and clause (ii) of this Section 6.15(b).

SECTION 7

DEFAULT.

The term “Event of Default” means the occurrence and continuance of any one or more of the following events (including the passage of time, if any, specified therefor) (provided, that, if any such event occurs and the Lenders or Majority Lenders, as required by the provisions of Section 10.14, subsequently agree in writing that they will not exercise any remedies hereunder as a result thereof, the occurrence and continuance of such event shall no longer be deemed an Event of Default hereunder insofar as the state of facts giving rise to such event is concerned):

7.1 Payment of Obligation.

The failure or refusal of the Borrower to pay any portion of the Obligation, as the same become due in accordance with the terms of the Loan Papers and, in the case of an interest payment, such failure or refusal continues for a period of 5 Business Days (no grace period being given for failure or refusal to make a principal payment). Notwithstanding the foregoing, the Borrower’s failure to pay, if caused solely by a wire transfer malfunction or similar problem outside the Borrower’s control, shall not be deemed an Event of Default so long as such failure to pay is promptly corrected.

7.2 Covenants.

(a) The failure or refusal of the Borrower (and, if applicable, any other Company) to punctually and properly perform, observe, and comply with any covenant, agreement, or condition contained in Section 5.3(e)(iii) or Section 6.

(b) The failure or refusal of the Borrower (and, if applicable, any other Company) to punctually and properly perform, observe, and comply with any covenant, agreement, or condition contained in any of the Loan Papers to which such Company is a party, other than covenants to pay the Obligation and the covenants listed in clause (a) preceding, and such failure or refusal continues for 30 days after notice from the Administrative Agent to the Borrower.

7.3 Debtor Relief.

The Companies shall not be Solvent, or any Company (a) fails to pay its Debt generally as it becomes due, (b) voluntarily seeks, consents to, or acquiesces in the benefit of any Debtor Relief Law, or (c) becomes a party to or is made the subject of any proceeding provided for by any Debtor Relief Law, other than as a creditor or claimant, that could suspend or otherwise adversely affect the Rights of the Administrative Agent or the Lenders granted in the Loan Papers (unless, in the event such proceeding is involuntary, the petition instituting same is dismissed within 60 days after its filing).

7.4 Attachment.

The failure of any Company to have discharged within 60 days after commencement any attachment, sequestration, or similar proceeding which, individually or together with all such other proceedings then pending, affects assets of such Company having a value (individually or collectively) equal to or more than \$250,000,000 or 1% of Consolidated Net Worth, whichever is greater.

7.5 Payment of Judgments.

Any Company fails to pay any judgments or orders for the payment of money in excess of the greater of \$250,000,000 or 1% of Consolidated Net Worth (individually or collectively) rendered against it or any of its assets and either (a) any enforcement proceedings shall have been commenced by any creditor upon any such judgment or order or (b) a stay of enforcement of any such judgment or order, by reason of pending appeal or otherwise, shall not be in effect prior to the time its assets may be lawfully sold to satisfy such judgment.

7.6 Default Under Other Agreements.

A default exists under any Material Agreement to which any Company is a party, the effect of which is to cause, or which permits the holder thereof (or a trustee or representative of such holder) to cause, unpaid consideration of at least 2% of Consolidated Net Worth (individually or in the aggregate) to become due prior to the stated maturity or prior to the

regularly scheduled dates of payment. For the purposes of this paragraph, a default by any Company in the payment of any obligation at its stated maturity date (taking into account any applicable cure period) shall be deemed to have caused such obligation to become due prior to such stated final maturity.

7.7 Misrepresentation.

The Administrative Agent or any Lender discovers that any statement, representation, or warranty in the Loan Papers, any Financial Statement of the Borrower, or any writing ever delivered to the Administrative Agent or any Lender pursuant to the Loan Papers is false, misleading, or erroneous when made, deemed made or delivered in any material respect.

7.8 ERISA.

(i) An ERISA Event shall have occurred, (ii) the PBGC shall institute proceedings (including giving notice of intent thereof) to terminate any Plan or Plans, (iii) the Borrower or any Subsidiary or any ERISA Affiliate shall have been notified by the sponsor of a Multiemployer Plan that such Multiemployer Plan is in reorganization or is being terminated, within the meaning of Title IV of ERISA; and in each case in clauses (i) through (iii) above, such event or condition, together with all other such events or conditions, if any, would reasonably be expected to have a Material Adverse Effect.

7.9 Validity and Enforceability of Loan Papers.

Any Loan Paper shall, at any time after its execution and delivery and for any reason, cease to be in full force and effect in any material respect or be declared to be null and void, should the Company fail to cure within five days of discovery by the Company or notice from the Administrative Agent to the Borrower, or the validity or enforceability thereof be contested by any Company party thereto or any Company shall deny that it has any liability or obligations under any Loan Paper to which it is a party.

7.10 Change in Control. If an Event of Default occurs pursuant to Section 2.23.

SECTION 8

RIGHTS AND REMEDIES.

8.1 Remedies Upon Event of Default.

(a) Should an Event of Default occur and be continuing under Section 7.3, the entire unpaid balance of the Obligation shall automatically become due and payable without any action of any kind whatsoever.

(b) Should any other Event of Default occur and be continuing, subject to any agreement among the Lenders, the Administrative Agent may (and shall upon the request of the Majority Lenders), at its (or the Majority Lenders') election, do any one or more of the following: (i) if the maturity of the Obligation has not already been accelerated under Section

8.1(a), declare the entire unpaid balance of the Obligation, or any part thereof, immediately due and payable, whereupon it shall be due and payable (and notice of such declaration shall promptly be given thereafter by the Administrative Agent to the Borrower); (ii) reduce any claim to judgment; (iii) exercise (or request each Lender to exercise) the Rights of offset or banker's Lien against the interest of the Borrower in and to every account and other property of the Borrower which are in the possession of any Lender to the extent of the full amount of the Obligation; and (iv) exercise any and all other legal or equitable Rights afforded by the Loan Papers, the Laws of the State of New York or any other jurisdiction as the Administrative Agent shall deem appropriate, or otherwise, including, but not limited to, the Right to bring suit or other proceedings before any Tribunal either for specific performance of any covenant or condition contained in any of the Loan Papers or in aid of the exercise of any Right granted to the Lenders in any of the Loan Papers.

8.2 Waivers.

The Borrower hereby waives presentment and demand for payment, protest, notice of intention to accelerate, notice of acceleration, and notice of protest and nonpayment, and agrees that its liability with respect to the Obligation, or any part thereof, shall not be affected by any renewal or extension in the time of payment of the Obligation, by any indulgence, or by any release or change in any security for the payment of the Obligation.

8.3 Performance by Administrative Agent.

If any covenant, duty, or agreement of any Company is not performed in accordance with the terms of the Loan Papers, the Administrative Agent may, at its option (but subject to the approval of the Majority Lenders), perform or attempt to perform such covenant, duty, or agreement on behalf of such Company. In such event, any amount expended by the Administrative Agent in such performance or attempted performance shall be reasonable, payable by the Borrower to the Administrative Agent on demand, shall become part of the Obligation, and shall bear interest at the Default Rate from the date of such expenditure by the Administrative Agent until paid. Notwithstanding the foregoing, it is expressly understood that the Administrative Agent does not assume and shall never have, except by its express written consent, any liability or responsibility for the performance of any covenant, duty, or agreement of any Company.

8.4 Delegation of Duties and Rights.

The Administrative Agent and the Lenders may perform any of their duties or exercise any of their Rights under the Loan Papers by or through the Administrative Agent and their and the Administrative Agent's officers, directors, employees, attorneys, agents, or other representatives.

8.5 Lenders Not in Control.

None of the covenants or other provisions contained in this Agreement or in any other Loan Paper shall, or shall be deemed to, give the Administrative Agent or the Lenders the Right

to exercise control over the assets (including, without limitation, Real Property), affairs, or management of any Company, the power of the Administrative Agent and the Lenders being limited to the Right to exercise the remedies provided in this Section 8.

8.6 Waivers by Lenders.

The acceptance by the Administrative Agent or the Lenders at any time and from time to time of partial payment on the Obligation shall not be deemed to be a waiver of any Event of Default then existing. No waiver by the Administrative Agent, the Majority Lenders, or all of the Lenders of any Event of Default shall be deemed to be a waiver of any other then-existing or subsequent Event of Default. No delay or omission by the Administrative Agent, the Majority Lenders, or all of the Lenders in exercising any Right under the Loan Papers shall impair such Right or be construed as a waiver thereof or any acquiescence therein, nor shall any single or partial exercise of any such Right preclude other or further exercise thereof, or the exercise of any other Right under the Loan Papers or otherwise.

8.7 Cumulative Rights.

All Rights available to the Administrative Agent and the Lenders under the Loan Papers are cumulative of and in addition to all other Rights granted to the Administrative Agent and the Lenders at law or in equity, whether or not the Obligation is due and payable and whether or not the Administrative Agent or the Lenders have instituted any suit for collection, foreclosure, or other action in connection with the Loan Papers.

8.8 Application of Proceeds.

Any and all proceeds ever received by the Administrative Agent or the Lenders from the exercise of any Rights pertaining to the Obligation shall be applied to the Obligations first, to pay incurred and unpaid fees and expenses of the Administrative Agent under the Loan Papers and second, ratably to pay all other Obligations.

8.9 Certain Proceedings.

The Borrower will promptly execute and deliver or cause the execution and delivery of, all applications, certificates, instruments, registration statements, and all other documents and papers the Administrative Agent or the Lenders may reasonably request in connection with the obtaining of any consent, approval, registration, qualification, permit, license, or authorization of any other Tribunal or other Person necessary or appropriate for the effective exercise of any Rights under the Loan Papers. Because the Borrower agrees that the Administrative Agent's and the Lenders' remedies at Law for failure of the Borrower to comply with the provisions of this paragraph would be inadequate and that such failure would not be adequately compensable in damages, the Borrower agrees that the covenants of this paragraph may be specifically enforced.

8.10 Setoff.

If an Event of Default shall have occurred and is continuing, each Lender is hereby authorized at any time and from time to time, without prior notice to the Borrower (any such notice being hereby expressly waived by the Borrower), to set off and apply any and all deposits (general or special, time or demand, provisional or final) at any time held and any other indebtedness at any time owing by such Lender to or for the credit or the account of the Borrower against any portion of the Obligation owing to such Lender, irrespective of whether or not all of the Obligation, or any part thereof, shall be then due. Each Lender agrees promptly to notify the Borrower (with a copy to the Administrative Agent) after any such setoff and application; provided, that the failure to give such notice shall not affect the validity of such setoff and application. The rights and remedies of each Lender hereunder are in addition to other rights and remedies (including, without limitation, other rights of setoff) which such Lender may have.

SECTION 9

THE ADMINISTRATIVE AGENT.

9.1 Appointment.

Each Lender hereby irrevocably designates and appoints the Administrative Agent as the agent of such Lender under this Agreement and the other Loan Papers, and each such Lender irrevocably authorizes the Administrative Agent, in such capacity, to take such action on its behalf under the provisions of this Agreement and the other Loan Papers and to exercise such powers and perform such duties as are expressly delegated to the Administrative Agent by the terms of this Agreement and the other Loan Papers, together with such other powers as are reasonably incidental thereto. Notwithstanding any provision to the contrary elsewhere in this Agreement, the Administrative Agent shall not have any duties or responsibilities, except those expressly set forth herein, or any fiduciary relationship with any Lender, and no implied covenants, functions, responsibilities, duties, obligations or liabilities shall be read into this Agreement or any other Loan Paper or otherwise exist against the Administrative Agent.

9.2 Delegation of Duties.

The Administrative Agent may execute any of its duties under this Agreement and the other Loan Papers by or through agents or attorneys-in-fact and shall be entitled to advice of counsel concerning all matters pertaining to such duties. The Administrative Agent shall not be responsible for the negligence or misconduct of any agents or attorneys-in-fact selected by it with reasonable care.

9.3 Exculpatory Provisions.

Neither the Administrative Agent nor any of its respective officers, directors, employees, agents, attorneys-in-fact or affiliates shall be (a) liable for any action lawfully taken or omitted to be taken by it or such Person under or in connection with this Agreement or any other Loan Paper (except to the extent that any of the foregoing are found by a final and nonappealable decision of a court of competent jurisdiction to have resulted from its or such Person's own gross

negligence or willful misconduct) or (b) responsible in any manner to any of the Lenders for any recitals, statements, representations or warranties made by any Company or any officer thereof contained in this Agreement or any other Loan Paper or in any certificate, report, statement or other document referred to or provided for in, or received by the Administrative Agent under or in connection with, this Agreement or any other Loan Paper or for the value, validity, effectiveness, genuineness, enforceability or sufficiency of this Agreement or any other Loan Paper or for any failure of any Company a party thereto to perform its obligations hereunder or thereunder. The Administrative Agent shall not be under any obligation to any Lender to ascertain or to inquire as to the observance or performance of any of the agreements contained in, or conditions of, this Agreement or any other Loan Paper, or to inspect the properties, books or records of any Company.

9.4 Reliance by Administrative Agent.

The Administrative Agent shall be entitled to rely, and shall be fully protected in relying, upon any instrument, writing, resolution, notice, consent, certificate, affidavit, letter, telecopy or e-mail message, statement, order or other document or conversation believed by it to be genuine and correct and to have been signed, sent or made by the proper Person or Persons and upon advice and statements of legal counsel (including counsel to the Borrower), independent accountants and other experts selected by the Administrative Agent. The Administrative Agent may deem and treat the payee of any Note as the owner thereof for all purposes unless a written notice of assignment, negotiation or transfer thereof shall have been filed with the Administrative Agent. The Administrative Agent shall be fully justified in failing or refusing to take any action under this Agreement or any other Loan Paper unless it shall first receive such advice or concurrence of the Majority Lenders (or, if so specified by this Agreement, all Lenders) as it deems appropriate or it shall first be indemnified to its satisfaction by the Lenders against any and all liability and expense that may be incurred by it by reason of taking or continuing to take any such action. The Administrative Agent shall in all cases be fully protected in acting, or in refraining from acting, under this Agreement and the other Loan Papers in accordance with a request of the Majority Lenders (or, if so specified by this Agreement, all Lenders), and such request and any action taken or failure to act pursuant thereto shall be binding upon all the Lenders and all future holders of the Loans.

9.5 Notice of Default.

The Administrative Agent shall not be deemed to have knowledge or notice of the occurrence of any Default or Event of Default unless the Administrative Agent has received notice from a Lender or the Borrower referring to this Agreement, describing such Default or Event of Default and stating that such notice is a “notice of default.” In the event that the Administrative Agent receives such a notice, the Administrative Agent shall promptly give notice thereof to the Lenders. The Administrative Agent shall take such action with respect to such Default or Event of Default as shall be reasonably directed by the Majority Lenders (or, if so specified by this Agreement, all Lenders); provided, that unless and until the Administrative Agent shall have received such directions, the Administrative Agent may (but shall not be

obligated to) take such action, or refrain from taking such action, with respect to such Default or Event of Default as it shall deem advisable in the best interests of the Lenders.

9.6 Non-Reliance on the Administrative Agent and Other Lenders.

Each Lender expressly acknowledges that neither the Administrative Agent nor any of their respective officers, directors, employees, agents, advisors, attorneys-in-fact or affiliates have made any representations or warranties to it and that no act by the Administrative Agent hereafter taken, including any review of the affairs of a Company or any affiliate of a Company, shall be deemed to constitute any representation or warranty by the Administrative Agent to any Lender. Each Lender represents to the Administrative Agent that it has, independently and without reliance upon the Administrative Agent or any other Lender, and based on such documents and information as it has deemed appropriate, made its own appraisal of and investigation into the business, operations, property, financial and other condition and creditworthiness of the Companies and their affiliates and made its own decision to make its Loans hereunder and enter into this Agreement. Each Lender also represents that it will, independently and without reliance upon the Administrative Agent or any other Lender, and based on such documents and information as it shall deem appropriate at the time, continue to make its own credit analysis, appraisals and decisions in taking or not taking action under this Agreement and the other Loan Papers, and to make such investigation as it deems necessary to inform itself as to the business, operations, property, financial and other condition and creditworthiness of the Companies and their affiliates. Except for notices, reports and other documents expressly required to be furnished to the Lenders by the Administrative Agent hereunder, the Administrative Agent shall not have any duty or responsibility to provide any Lender with any credit or other information concerning the business, operations, property, condition (financial or otherwise), prospects or creditworthiness of any Company or any affiliate of a Company that may come into the possession of the Administrative Agent or any of its officers, directors, employees, agents, advisors, attorneys-in-fact or affiliates. Each Lender represents and warrants that (a) the Loan Papers set forth the terms of a commercial lending facility and (b) it is engaged in making, acquiring or holding commercial loans in the ordinary course and is entering into this Agreement as a Lender for the purpose of making, acquiring or holding commercial loans set forth herein as may be applicable to such Lender, and not for the purpose of purchasing, acquiring or holding any other type of financial instrument, and each Lender agrees not to assert a claim in contravention of the foregoing. Each Lender represents and warrants that it is sophisticated with respect to decisions to make, acquire or hold commercial loans, as may be applicable to such Lender, and either it, or the Person exercising discretion in making its decision to make, acquire or hold such commercial loans, is experienced in making, acquiring or holding such commercial loans.

9.7 Enforcement. By its acceptance of the benefits of this Agreement and the other Loan Papers, each Lender agrees that (a) the Loan Papers may be enforced only by the Administrative Agent, subject to Section 10.14, (b) no Lender shall have any right individually to enforce or seek to enforce this Agreement or the other Loan Papers or to realize upon any security given to secure the payment and performance of the Obligations and (c) no Lender has any right to notice of any action or to consent to, direct or object to any action hereunder or

under any other Loan Paper or otherwise other than in its capacity as a Lender and, in such case, only to the extent expressly provided in the Loan Papers.

9.8 Indemnification.

The Lenders agree to indemnify the Administrative Agent, the Lead Arranger and their respective officers, directors, employees, partners, affiliates, agents, advisors and controlling persons (each, an “Agent Indemnitee”) (to the extent not reimbursed by the Borrower and without limiting the obligation of the Borrower to do so), ratably according to their respective Term Percentages in effect on the date on which indemnification is sought under this Section (or, if indemnification is sought after the date upon which the Loans shall have been paid in full, ratably in accordance with such Term Percentages immediately prior to such date), from and against any and all liabilities, obligations, losses, damages, claims, penalties, actions, judgments, suits, costs, expenses or disbursements of any kind whatsoever (including reasonable fees, disbursements, settlement costs and other charges of legal counsel) that may at any time (whether before or after the payment of the Loans) be imposed on, incurred by or asserted against such Agent Indemnitee in any way relating to or arising out of, the Loans, this Agreement, any of the other Loan Papers or any documents contemplated by or referred to herein or therein or the transactions contemplated hereby or thereby or any action taken or omitted by such Agent Indemnitee under or in connection with any of the foregoing; provided, that no Lender shall be liable for the payment of any portion of such liabilities, obligations, losses, damages, claims, penalties, actions, judgments, suits, costs, expenses or disbursements that are found by a final and nonappealable decision of a court of competent jurisdiction to have resulted from such Agent Indemnitee’s fraud, gross negligence or willful misconduct. The agreements in this Section shall survive the termination of this Agreement and payment of the Loans and all other amounts payable hereunder.

9.9 Administrative Agent in its Individual Capacity.

The Administrative Agent and its affiliates may make loans to, accept deposits from and generally engage in any kind of business with any Company as though such Administrative Agent were not an Administrative Agent. With respect to its Loans made or renewed by it, the Administrative Agent shall have the same rights and powers under this Agreement and the other Loan Papers as any Lender and may exercise the same as though it were not an Administrative Agent, and the terms “Lender” and “Lenders” shall include the Administrative Agent in its individual capacity.

9.10 Successor Administrative Agent.

The Administrative Agent may resign as Administrative Agent upon 10 days’ notice to the Lenders and the Borrower. If the Administrative Agent shall resign as Administrative Agent under this Agreement and the other Loan Papers, then the Majority Lenders shall appoint from among the Lenders a successor agent for the Lenders, which successor agent shall (unless an Event of Default under Section 7.1 or Section 7.3 with respect to the Borrower shall have occurred and be continuing) be subject to approval by the Borrower (which approval shall not be unreasonably withheld or delayed), whereupon such successor agent shall succeed to the rights,

powers and duties of the Administrative Agent, and the term “Administrative Agent” shall mean such successor agent effective upon such appointment and approval, and the former Administrative Agent’s rights, powers and duties as Administrative Agent shall be terminated, without any other or further act or deed on the part of such former Administrative Agent or any of the parties to this Agreement or any holders of the Loans. If no successor agent has accepted appointment as Administrative Agent by the date that is 10 days following a retiring Administrative Agent’s notice of resignation, the retiring Administrative Agent’s resignation shall nevertheless thereupon become effective, and the Lenders shall assume and perform all of the duties of the Administrative Agent hereunder until such time, if any, as the Majority Lenders appoint a successor agent as provided for above. After any retiring Administrative Agent’s resignation as Administrative Agent, the provisions of this Section 9 shall continue to inure to its benefit.

9.11 Certain ERISA Matters.

(a) Each Lender (x) represents and warrants, as of the date such Person became a Lender party hereto, to, and (y) covenants, from the date such Person became a Lender party hereto to the date such Person ceases being a Lender party hereto, for the benefit of, the Administrative Agent and not, for the avoidance of doubt, to or for the benefit of the Borrower or any other Loan Party, that at least one of the following is and will be true:

(i) such Lender is not using “plan assets” (within the meaning of Section 3(42) of ERISA or otherwise) of one or more Benefit Plans with respect to such Lender’s entrance into, participation in, administration of and performance of the Loans, the Commitments or this Agreement,

(ii) the transaction exemption set forth in one or more PTEs, such as PTE 84-14 (a class exemption for certain transactions determined by independent qualified professional asset managers), PTE 95-60 (a class exemption for certain transactions involving insurance company general accounts), PTE 90-1 (a class exemption for certain transactions involving insurance company pooled separate accounts), PTE 91-38 (a class exemption for certain transactions involving bank collective investment funds) or PTE 96-23 (a class exemption for certain transactions determined by in-house asset managers), is applicable with respect to such Lender’s entrance into, participation in, administration of and performance of the Loans, the Commitments and this Agreement,

(iii) (A) such Lender is an investment fund managed by a “Qualified Professional Asset Manager” (within the meaning of Part VI of PTE 84-14), (B) such Qualified Professional Asset Manager made the investment decision on behalf of such Lender to enter into, participate in, administer and perform the Loans, the Commitments and this Agreement, (C) the entrance into, participation in, administration of and performance of the Loans, the Commitments and this Agreement satisfies the requirements of subsections (b) through (g) of Part I of PTE 84-14 and (D) to the best knowledge of such Lender, the requirements of subsection (a) of Part I of PTE 84-14 are satisfied with respect to such Lender’s entrance into, participation in, administration of and performance of the Loans, the Commitments and this Agreement, or

(iv) such other representation, warranty and covenant as may be agreed in writing between the Administrative Agent, in its sole discretion, and such Lender.

(b) In addition, unless either (1) sub-clause (i) in the immediately preceding clause (a) is true with respect to a Lender or (2) a Lender has provided another representation, warranty and covenant in accordance with sub-clause (iv) in the immediately preceding clause (a), such Lender further (x) represents and warrants, as of the date such Person became a Lender party hereto, to, and (y) covenants, from the date such Person became a Lender party hereto to the date such Person ceases being a Lender party hereto, for the benefit of, the Administrative Agent and not, for the avoidance of doubt, to or for the benefit of the Borrower or any other Loan Party, that the Administrative Agent is not a fiduciary with respect to the assets of such Lender involved in such Lender's entrance into, participation in, administration of and performance of the Loans, the Commitments and this Agreement (including in connection with the reservation or exercise of any rights by the Administrative Agent under this Agreement, any Loan Paper or any documents related hereto or thereto).

SECTION 10

MISCELLANEOUS.

10.1 Reserved.

10.2 Money and Interest.

Unless stipulated otherwise (a) all references in any of the Loan Papers to "dollars," "money," "payments," or other similar financial or monetary terms are references to currency of the United States of America and (b) all references to interest are to simple and not compound interest.

10.3 Number and Gender of Words.

Whenever in any Loan Paper the singular number is used, the same shall include the plural where appropriate, and vice versa; and words of any gender in any Loan Paper shall include each other gender where appropriate. The words "herein," "hereof," and "hereunder," and other words of similar import refer to the relevant Loan Paper as a whole and not to any particular part or subdivision thereof.

10.4 Headings.

The headings, captions, and arrangements used in any of the Loan Papers are, unless specified otherwise, for convenience only and shall not be deemed to limit, amplify, or modify the terms of the Loan Papers, nor affect the meaning thereof.

10.5 Exhibits.

If any Exhibit, which is to be executed and delivered, contains blanks, the same shall be completed correctly and in accordance with the terms and provisions contained and as contemplated herein prior to, at the time of, or after the execution and delivery thereof.

10.6 Notices.

All notices, requests and demands to or upon the respective parties hereto to be effective shall be in writing (including by telecopy), and, unless otherwise expressly provided herein, shall be deemed to have been duly given or made when delivered, or three Business Days after being deposited in the mail, postage prepaid, or, in the case of telecopy notice, when received, addressed as follows in the case of the Borrower and the Administrative Agent, and as set forth in an administrative questionnaire delivered to the Administrative Agent in the case of the Lenders, or to such other address as may be hereafter notified by the respective parties hereto:

Borrower: Qwest Corporation

100 CenturyLink Drive
Monroe, Louisiana 71203
Attn:
Telecopy:
Telephone:

Qwest Corporation
1025 Eldorado Boulevard
Broomfield, Colorado 80021

Attn:

Telecopy:
Telephone:

with a copy to: Jones Walker LLP

201 St. Charles Ave, Suite 5100
New Orleans, Louisiana 70170
Attn: Amy Scafidel
Telecopy: (504) 589-8462
Telephone: (504) 582-8462

Administrative Agent: CoBank, ACB

6340 S. Fiddlers Green Circle
Greenwood Village, CO 80111
Attention: Loan Administration
Telecopy: (303) 740-4021
Email: loanadmin@cobank.com

provided, that any notice, request or demand to or upon the Administrative Agent or the Lenders shall not be effective until received.

Notices and other communications to the Lenders hereunder may be delivered or furnished by electronic communications pursuant to procedures approved by the Administrative Agent; provided, that the foregoing shall not apply to notices pursuant to Section 2 unless otherwise agreed by the Administrative Agent and the applicable Lender. The Administrative Agent or the Borrower may, in its discretion, agree to accept notices and other communications to it hereunder by electronic communications pursuant to procedures approved by it; provided, that approval of such procedures may be limited to particular notices or communications.

10.7 Exceptions to Covenants.

The Borrower shall not take any action or fail to take any action which is permitted as an exception to any of the covenants contained in any of the Loan Papers if such action or omission would result in the breach of any other covenant contained in any of the Loan Papers.

10.8 Survival.

All covenants, agreements, undertakings, representations, and warranties made in any of the Loan Papers (a) shall survive all closings under the Loan Papers, (b) except as otherwise indicated, shall not be affected by any investigation made by any party, and (c) unless otherwise provided herein shall terminate upon the later of the termination of this Agreement and the payment in full of the Obligation.

10.9 Governing Law.

THIS AGREEMENT AND THE RIGHTS AND OBLIGATIONS OF THE PARTIES UNDER THIS AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

10.10 Submission to Jurisdiction; Waivers.

The Borrower hereby irrevocably and unconditionally:

(a) submits for itself and its property in any legal action or proceeding relating to this Agreement and the other Loan Papers to which it is a party, or for recognition and enforcement of any judgment in respect thereof, to the non-exclusive general jurisdiction of the courts of the State of New York, the courts of the United States for the Southern District of New York, and appellate courts from any thereof;

(b) consents that any such action or proceeding may be brought in such courts and waives any objection that it may now or hereafter have to the venue of any such action or proceeding in any such court or that such action or proceeding was brought in an inconvenient court and agrees not to plead or claim the same;

(c) agrees that service of process in any such action or proceeding may be effected by mailing a copy thereof by registered or certified mail (or any substantially similar form of mail), postage prepaid, to the Borrower, as the case may be at its address set forth in

Section 10.6 or at such other address of which the Administrative Agent shall have been notified pursuant thereto;

(d) agrees that nothing herein shall affect the right to effect service of process in any other manner permitted by law or shall limit the right to sue in any other jurisdiction; and

(e) waives, to the maximum extent not prohibited by law, any right it may have to claim or recover in any legal action or proceeding referred to in this Section any special, exemplary, punitive or consequential damages.

10.11 WAIVERS OF JURY TRIAL.

THE BORROWER, THE ADMINISTRATIVE AGENT AND THE LENDERS HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVE TRIAL BY JURY IN ANY LEGAL ACTION OR PROCEEDING RELATING TO THIS AGREEMENT OR ANY OTHER LOAN PAPER AND FOR ANY COUNTERCLAIM THEREIN.

10.12 Severability.

Any provision of this Agreement that is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

10.13 Integration.

This Agreement and the other Loan Papers represent the entire agreement of the Borrower, the Administrative Agent and the Lenders with respect to the subject matter hereof and thereof, and there are no promises, undertakings, representations or warranties by the Administrative Agent or any Lender relative to the subject matter hereof not expressly set forth or referred to herein or in the other Loan Papers.

10.14 Amendments, Etc.

Neither this Agreement, any other Loan Paper, nor any terms hereof or thereof may be amended, supplemented or modified except in accordance with the provisions of this Section 10.14. The Majority Lenders and each Loan Party to the relevant Loan Paper may, or, with the written consent of the Majority Lenders, the Administrative Agent and each Loan Party party to the relevant Loan Paper may, from time to time, (a) enter into written amendments, supplements or modifications hereto and to the other Loan Papers for the purpose of adding any provisions to this Agreement or the other Loan Papers or changing in any manner the rights of the Lenders or of the Loan Parties hereunder or thereunder or (b) waive, on such terms and conditions as the Majority Lenders or the Administrative Agent, as the case may be, may specify in such instrument, any of the requirements of this Agreement or the other Loan Papers or any Default or Event of Default and its consequences; provided, however, that no such waiver and no such

amendment, supplement or modification shall (i) forgive or reduce the principal amount or extend the final scheduled date of maturity of any Loan, reduce the stated rate of any interest or margin payable hereunder (except in connection with the waiver of applicability of any post-default increase in interest rates (which waiver shall be effective with the consent of the Majority Lenders)), extend the scheduled date of any payment thereof, increase the amount or extend the expiration date of any Lender's Commitment or amend, modify or waive any provision of Section 2.13 or 2.14, in each case without the written consent of each Lender and Voting Participant directly affected thereby; (ii) eliminate or reduce the voting rights of any Lender or Voting Participant under this Section 10.14 without the written consent of such Lender or Voting Participant; (iii) reduce any percentage specified in the definition of Majority Lenders or consent to the assignment or transfer by the Borrower of any of its rights and obligations under this Agreement and the other Loan Papers or release all or substantially all of the Guarantors from their obligations under the Guarantee Agreement, in each case without the written consent of all Lenders and Voting Participants; or (iv) amend, modify or waive any provision of Section 9 without the written consent of the Administrative Agent. Any such waiver and any such amendment, supplement or modification shall apply equally to each of the Lenders and shall be binding upon the Loan Parties, the Lenders, the Administrative Agent and all future holders of the Loans. In the case of any waiver, the Companies, the Lenders and the Administrative Agent shall be restored to their former position and rights hereunder and under the other Loan Papers, and any Default or Event of Default waived shall be deemed to be cured and not continuing; but no such waiver shall extend to any subsequent or other Default or Event of Default, or impair any right consequent thereon.

Notwithstanding the foregoing, this Agreement may be amended (or amended and restated) with the written consent of the Majority Lenders, the Administrative Agent and the Borrower (a) to add one or more additional credit facilities to this Agreement and to permit the extensions of credit from time to time outstanding thereunder and the accrued interest and fees in respect thereof to share ratably in the benefits of this Agreement and the other Loan Papers with the aggregate principal amount of the Loans then outstanding and the accrued interest and fees in respect thereof and (b) to include appropriately the Lenders holding such credit facilities in any determination of the Majority Lenders.

Notwithstanding the foregoing, this Agreement may be amended (or amended and restated) by the Administrative Agent, with the consent of the Borrower, and without the consent of any Lender, in order to correct, amend or cure any ambiguity, inconsistency or defect or correct any typographical error or other manifest error.

10.15 Waivers.

No course of dealing nor any failure or delay by the Administrative Agent, any Lender, or any of their respective officers, directors, employees, agents, representatives, or attorneys with respect to exercising any Right of the Lenders hereunder shall operate as a waiver thereof. A waiver must be in writing and signed by the Lenders (or the Majority Lenders to the extent permitted hereunder) to be effective, and such waiver will be effective only in the specific instance and for the specific purpose for which it is given.

10.16 Governmental Regulation.

Anything contained in this Agreement to the contrary notwithstanding, the Lenders shall not be obligated to extend credit to the Borrower in violation of any Law.

10.17 Multiple Counterparts.

This Agreement may be executed by one or more of the parties to this Agreement on any number of separate counterparts, and all of said counterparts taken together shall be deemed to constitute one and the same instrument. Delivery of an executed signature page of this Agreement by email or facsimile transmission shall be effective as delivery of a manually executed counterpart hereof. A set of the copies of this Agreement signed by all the parties shall be lodged with the Borrower and the Administrative Agent.

10.18 Successors and Assigns; Participations; Assignments.

(a) The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns permitted hereby, except that (i) the Borrower may not assign or otherwise transfer any of its rights or obligations hereunder without the prior written consent of each Lender (and any attempted assignment or transfer by the Borrower without such consent shall be null and void) and (ii) no Lender may assign or otherwise transfer its rights or obligations hereunder except in accordance with this Section.

(b) (i) Subject to the conditions set forth in paragraph (b)(ii) below, any Lender may assign to one or more assignees (each, an “Assignee”) all or a portion of its rights and obligations under this Agreement (including all or a portion of the Loans at the time owing to it) with the prior written consent (such consent not to be unreasonably withheld) of:

(A) the Borrower; provided, that no consent of the Borrower shall be required for an assignment to a Lender, an affiliate of a Lender, an Approved Fund (as defined below) or, if an Event of Default has occurred and is continuing, any other Person; and provided, further, that the Borrower shall be deemed to have consented to any such assignment unless the Borrower shall object thereto by written notice to the Administrative Agent within ten days after having received notice thereof; and

(B) the Administrative Agent;

(ii) Assignments shall be subject to the following additional conditions:

(A) except in the case of an assignment to a Lender, an affiliate of a Lender or an Approved Fund or an assignment of the entire remaining amount of the assigning Lender’s Loans, the amount of the Loans of the

assigning Lender subject to each such assignment (determined as of the date the Assignment and Assumption with respect to such assignment is delivered to the Administrative Agent) shall not be less than \$5,000,000 unless each of the Borrower and the Administrative Agent otherwise consent; provided, that (1) no such consent of the Borrower shall be required if an Event of Default has occurred and is continuing and (2) such amounts shall be aggregated in respect of each Lender and its affiliates or Approved Funds, if any;

(B) (1) the parties to each assignment shall execute and deliver to the Administrative Agent an Assignment and Assumption, together with a processing and recordation fee of \$3,500 and (2) the assigning Lender shall have paid in full any amounts owing by it to the Administrative Agent;

(C) the Assignee, if it shall not be a Lender, shall deliver to the Administrative Agent an administrative questionnaire;

(D) unless otherwise agreed by the Borrower, the Assignee shall either (1) be a “U.S. Person” as defined in Section 7701(a)(30) of the Code or (2) have delivered the documents required by Section 2.19(d);

(E) in the case of an assignment to a CLO (as defined below), unless such assignment (or an assignment to a CLO managed by the same manager or an Affiliate of such manager) shall have been approved by the Borrower (the Borrower agreeing that such approval, if requested, will not be unreasonably withheld or delayed) the assigning Lender shall retain the sole right to approve any amendment, modification or waiver of any provision of this Agreement and the other Loan Papers, provided, that the Assignment and Assumption between such Lender and such CLO may provide that such Lender will not, without the consent of such CLO, agree to any amendment, modification or waiver that (1) requires the consent of each Lender directly affected thereby pursuant to the proviso to the second sentence of Section 10.14 and (2) directly affects such CLO; and

(F) no assignment shall be made to (i) a natural person, (2) the Borrower or (3) any of the Borrower’s Affiliates, Subsidiaries or Unrestricted Subsidiaries.

For the purposes of this Section 10.18, the terms “Approved Fund” and “CLO” have the following meanings:

“Approved Fund” means (a) a CLO and (b) with respect to any Lender that is a fund, which invests in bank loans and similar extensions of credit, any other fund that invests in bank loans and similar extensions of credit and is managed by the same investment advisor as such Lender or by an affiliate of such investment advisor.

“CLO” means any entity (whether a corporation, partnership, trust or otherwise) that is engaged in making, purchasing, holding or otherwise investing in bank loans and similar extensions of credit in the ordinary course of its business and is administered or managed by a Lender or an affiliate of such Lender.

(iii) Subject to acceptance and recording thereof pursuant to paragraph (b)(iv) below, from and after the effective date specified in each Assignment and Assumption the Assignee thereunder shall be a party hereto and, to the extent of the interest assigned by such Assignment and Assumption, have the rights and obligations of a Lender under this Agreement, and the assigning Lender thereunder shall, to the extent of the interest assigned by such Assignment and Assumption, be released from its obligations under this Agreement (and, in the case of an Assignment and Assumption covering all of the assigning Lender’s rights and obligations under this Agreement, such Lender shall cease to be a party hereto but shall continue to be entitled to the benefits of Sections 2.10, 2.12, 2.19 and 10.22). Any assignment or transfer by a Lender of rights or obligations under this Agreement that does not comply with this Section 10.18 shall be treated for purposes of this Agreement as a sale by such Lender of a participation in such rights and obligations in accordance with paragraph (c) of this Section.

(iv) The Administrative Agent, acting for this purpose as an agent of the Borrower, shall maintain at one of its offices a copy of each Assignment and Assumption delivered to it and a register for the recordation of the names and addresses of the Lenders, and principal amount of the Loans owing to, each Lender pursuant to the terms hereof from time to time (the “Register”). The entries in the Register shall be conclusive, and the Borrower, the Administrative Agent and the Lenders may treat each Person whose name is recorded in the Register pursuant to the terms hereof as a Lender hereunder for all purposes of this Agreement, notwithstanding notice to the contrary.

(v) Upon its receipt of a duly completed Assignment and Assumption executed by an assigning Lender and an Assignee, the Assignee’s completed administrative questionnaire (unless the Assignee shall already be a Lender hereunder), the processing and recordation fee referred to in paragraph (b) of this Section and any written consent to such assignment required by paragraph (b) of this Section, the Administrative Agent shall accept such Assignment and Assumption and record the information contained therein in the Register. No assignment shall be effective for purposes of this Agreement unless it has been recorded in the Register as provided in this paragraph.

(c) (i) Any Lender may at any time, without the consent of, or notice to, the Borrower or the Administrative Agent, sell participations to any Person (other than a natural Person or a holding company, investment vehicle or trust for, or owned or operated for the primary benefit of, a natural Person or the Borrower or any of the Borrower’s Affiliates or Subsidiaries) (each a “Participant”) in all or a portion of such Lender’s rights and/or obligations under this Agreement (including all or a portion of its Commitment and/or the Loans owing to it); provided that (A) such Lender’s obligations under this Agreement shall remain unchanged, (B) such Lender shall remain solely responsible to the other parties hereto for the performance of such obligations and (C) the Borrower, the Administrative Agent and the Lenders shall continue

to deal solely and directly with such Lender in connection with such Lender's rights and obligations under this Agreement. For the avoidance of doubt, each Lender shall be responsible for the indemnity under Section 9.8 with respect to any payments made by such Lender to its Participant(s).

Any agreement pursuant to which a Lender sells such a participation shall provide that such Lender shall retain the sole right to enforce this Agreement and to approve any amendment, modification or waiver of any provision of this Agreement; provided, that such agreement may provide that such Lender will not, without the consent of the Participant, agree to any amendment, modification or waiver that (1) requires the consent of each Lender directly affected thereby pursuant to the proviso to the second sentence of Section 10.14 and (2) directly affects such Participant. Subject to paragraph (c)(ii) of this Section, the Borrower agrees that each Participant shall be entitled to the benefits of Sections 2.10, 2.12 and 2.19 to the same extent as if it were a Lender and had acquired its interest by assignment pursuant to paragraph (b) of this Section; provided that such Participant (A) agrees to be subject to the provisions of Section 2.21 as if it were an assignee under clause (b) of this Section 10.18; and (B) shall not be entitled to receive any greater payment under Section 2.10 or 2.19, with respect to any participation, than its participating Lender would have been entitled to receive, except to the extent such entitlement to receive a greater payment results from a Change in Law that occurs after the Participant acquired the applicable participation. Each Lender that sells a participation agrees, at the Borrower's request and expense, to use reasonable efforts to cooperate with the Borrower to effectuate the provisions of Section 2.21 with respect to any Participant. To the extent permitted by law, each Participant also shall be entitled to the benefits of Section 8.10 as though it were a Lender; provided, that such Participant shall be subject to Section 2.14 as though it were a Lender. Each Lender that sells a participation shall, acting solely for this purpose as a non-fiduciary agent of the Borrower, maintain a register on which it enters the name and address of each Participant and the principal amounts (and stated interest) of each Participant's interest in the Loans or other obligations under the Loan Papers (the "Participant Register"); provided that no Lender shall have any obligation to disclose all or any portion of the Participant Register (including the identity of any Participant or any information relating to a Participant's interest in any Commitments, Loans or its other obligations under any Loan Paper) to any Person except to the extent that such disclosure is necessary to establish that such Commitment, Loan, or other obligation is in registered form under Section 5f.103 1(c) of the United States Treasury Regulations. The entries in the Participant Register shall be conclusive absent manifest error, and such Lender shall treat each Person whose name is recorded in the Participant Register as the owner of such participation for all purposes of this Agreement notwithstanding any notice to the contrary. For the avoidance of doubt, the Administrative Agent (in its capacity as Administrative Agent) shall have no responsibility for maintaining a Participant Register. CoBank reserves the right to assign or sell participations in all or part of its Commitments or outstanding Loans hereunder on a non-patronage basis.

(d) Notwithstanding anything in Section 10.18(c) to the contrary, any Farm Credit Lender that (i) has purchased a participation in a minimum amount of \$5,000,000, (ii) has been designated as a voting Participant (a "Voting Participant") in a notice (a "Voting Participant Notice") sent by the relevant Lender (including any existing Voting Participant) to the

Administrative Agent and (iii) receives, prior to becoming a Voting Participant, the consent of the Administrative Agent (such Administrative Agent consent to be required only to the extent and under the circumstances it would be required if such Voting Participant were to become a Lender pursuant to an assignment in accordance with Section 10.18(b)) and such consent is not required for an assignment to an existing Voting Participant), shall be entitled to vote as if such Voting Participant were a Lender on all matters subject to a vote by Lenders, and the voting rights of the selling Lender (including any existing Voting Participant) shall be correspondingly reduced, on a dollar-for-dollar basis. Each Voting Participant Notice shall include, with respect to each Voting Participant, the information that would be included by a prospective Lender in an Assignment and Assumption. Notwithstanding the foregoing, each Farm Credit Lender designated as a Voting Participant in Schedule 10.18 shall be a Voting Participant without delivery of a Voting Participant Notice and without the prior written consent of the Administrative Agent. The selling Lender (including any existing Voting Participant) and the purchasing Voting Participant shall notify the Administrative Agent within three (3) Business Days of any termination, reduction or increase of the amount of, such participation. The Administrative Agent shall be entitled to conclusively rely on information contained in Voting Participant Notices and all other notices delivered pursuant hereto. The voting rights of each Voting Participant are solely for the benefit of such Voting Participant and shall not inure to any assignee or participant of such Voting Participant that is not a Farm Credit Lender.

(e) Any Lender may at any time pledge or assign a security interest in all or any portion of its rights under this Agreement to secure obligations of such Lender, including any pledge or assignment to secure obligations to a Federal Reserve Bank, and this Section shall not apply to any such pledge or assignment of a security interest; provided, that no such pledge or assignment of a security interest shall release a Lender from any of its obligations hereunder or substitute any such pledgee or Assignee for such Lender as a party hereto.

(f) The Borrower, upon receipt of written notice from the relevant Lender, agrees to issue Notes to any Lender requiring Notes to facilitate transactions of the type described in paragraph (d) above.

10.19 Confidentiality.

(a) No Lender will use confidential information obtained from the Borrower by virtue of the transactions contemplated hereby or its other relationships with the Borrower in connection with the performance by such Lender of services for other companies that are not affiliates of such Lender, and no Lender will furnish any such information to such other companies. The Borrower acknowledges that no Lender has any obligation to use in connection with the transactions contemplated hereby, or to furnish to the Borrower, confidential information obtained from other companies.

(b) Each Lender agrees to keep confidential, and not to publish, disclose or otherwise divulge to anyone (and to cause their respective officers, directors, employees, agents and representatives to keep confidential, and not to publish, disclose or otherwise divulge to anyone) all information with respect to the Companies, including all financial information and projections or all other information (the “Confidential Information”) except that the Lenders

shall be permitted to disclose Confidential Information: (i) to the Administrative Agent, any other Lender or any affiliate thereof, (ii) to their respective officers, directors, employees, agents, advisors, attorneys, accountants and representatives on a “need-to-know” basis in connection with the respective roles of the Lenders described herein, provided, that the Lenders implement reasonable precautions to prevent disclosure by any such personnel, (iii) to the extent required by applicable laws and regulations or requested or required in connection with any litigation or other legal process, provided, that the Lenders will use reasonable efforts to provide the Borrower with a reasonable opportunity to challenge the disclosure and request confidentiality protection for any Confidential Information that is required to be disclosed, (iv) subject to an agreement to comply with the provisions of this Section, to (A) actual or prospective transferees or (B) any direct or indirect counterparty to any Swap Agreement (or any professional advisor to such counterparty), (v) to the extent requested by any regulatory authority or self-regulatory body with jurisdiction or oversight over any Lender or any Affiliate of any Lender, (vi) to the extent such Confidential Information (A) becomes publicly available other than as a result of a breach of this agreement known to the disclosing Lender, (B) becomes available to such Lender on a non-confidential basis from a source other than the Borrower or (C) was available to such Lender on a non-confidential basis prior to its disclosure by the Borrower, (vii) to the National Association of Insurance Commissioners or any similar organization or any nationally recognized rating agency that requires access to information about a Lender’s investment portfolio in connection with ratings issued with respect to such Lender, or (viii) to the extent the Borrower shall have consented to such disclosure. Notwithstanding anything to the contrary contained above, the Lenders shall be entitled to use the Confidential Information in exercising remedies under this Agreement or any other Loan Paper.

10.20 Patriot Act.

The Administrative Agent and the Lenders hereby notifies the Borrower that, pursuant to the requirements of the USA Patriot Act, Title III of Pub. L. 107-56 (signed into law on October 26, 2001) (the “Patriot Act”), it is required to obtain, verify and record information that identifies the Borrower, which information includes names and addresses and other information that will allow the Administrative Agent or Lender to identify the Borrower in accordance with the Patriot Act.

10.21 No Advisory or Fiduciary Responsibility. In connection with all aspects of each transaction contemplated hereby (including in connection with any amendment, waiver or other modification hereof or of any other Loan Paper), the Borrower acknowledges and agrees that: (i) (A) the arranging and other services regarding this Agreement provided by the Administrative Agent, the Lead Arranger and the Lenders are arm’s-length commercial transactions between the Borrower and its Affiliates, on the one hand, and the Administrative Agent, the Lead Arranger and the Lenders, on the other hand, (B) the Borrower has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate, and (C) the Borrower is capable of evaluating, and understands and accepts, the terms, risks and conditions of the transactions contemplated hereby and by the other Loan Papers; (ii) (A) each of the Administrative Agent, the Lead Arranger and the Lenders is and has been acting solely as a principal and, except as expressly agreed in writing by the relevant parties, has not been, is not,

and will not be acting as an advisor, agent or fiduciary for the Borrower, any of its Affiliates or any other person and (B) neither the Administrative Agent, the Lead Arranger nor any Lender has any obligation to the Borrower or any of its Affiliates with respect to the transactions contemplated hereby except those obligations expressly set forth herein and in the other Loan Papers; and (iii) the Administrative Agent, the Lead Arranger, the Lenders, and their respective Affiliates may be engaged in a broad range of transactions that involve interests that differ from those of the Borrower and its Affiliates, and neither the Administrative Agent, the Lead Arranger nor any Lender has any obligation to disclose any of such interests to the Borrower or its Affiliates. To the fullest extent permitted by law, the Borrower hereby waives and releases any claims that it may have against the Administrative Agent, the Lead Arranger and the Lenders with respect to any breach or alleged breach of agency or fiduciary duty in connection with any aspect of any transaction contemplated hereby.

10.22 Effect of Amendment; No Novation. The amendment and restatement of the Prior Credit Agreement pursuant to this Agreement shall be effective as of the Closing Date. All obligations and rights of the Borrower, the other Loan Parties, the Administrative Agent and the Lenders arising out of or relating to the period commencing on the Closing Date shall be governed by the terms and provisions of this Agreement; the obligations of and rights of the Borrower, the other Loan Parties, the Administrative Agent, and the Lenders (as defined in the Prior Credit Agreement) arising out of or relating to the period prior to the Closing Date shall continue to be governed by the Prior Credit Agreement without giving effect to the amendment and restatements provided for herein. This Agreement shall not constitute a novation or termination of the Borrower's or any other Loan Party's obligations under the Prior Credit Agreement or any other Loan Paper executed or delivered in connection therewith, but shall constitute effective on the date hereof an amendment and restatement of the obligations and covenants of the Borrower and each other Loan Party under such Loan Papers (and the Borrower and each other Loan Party hereby reaffirms all such obligations and covenants, as hereby amended).

This Agreement does not extinguish the obligations for the payment of money outstanding under the Prior Credit Agreement or discharge or release the "Obligations" pursuant to the Existing Loan Papers. Nothing herein contained shall be construed as a substitution or novation of the obligations outstanding under the Prior Credit Agreement, the other Existing Loan Papers or instruments securing the same, which shall remain in full force and effect, except as expressly modified hereby or by another Loan Paper. Nothing expressed or implied in this Agreement shall be construed as a release or other discharge of the Borrower or any other Loan Party from any of its obligations or liabilities as "Borrower", a "Guarantor" or a "Loan Party" under the Prior Credit Agreement or any other Existing Loan Paper. Each Loan Party hereby (i) confirms and agrees that each Existing Loan Paper to which it is a party that is not being amended and restated concurrently herewith is, and shall continue to be, in full force and effect and is hereby ratified and confirmed in all respects except that on and after the Closing Date all references in any such Loan Paper to "the Credit Agreement", "thereto", "thereof", "thereunder" or words of like import referring to the Prior Credit Agreement shall mean the Prior Credit Agreement as amended and restated by this Agreement.

10.23 Conflicts and Ambiguities.

Any conflict or ambiguity between the terms and provisions herein and terms and provisions in any other Loan Paper shall be controlled by the terms and provisions herein.

10.24 GENERAL INDEMNIFICATION.

THE BORROWER SHALL INDEMNIFY, PROTECT, AND HOLD THE ADMINISTRATIVE AGENT, THE LEAD ARRANGER AND THE LENDERS AND THEIR RESPECTIVE PARENTS, SUBSIDIARIES, AFFILIATES, DIRECTORS, OFFICERS, EMPLOYEES, REPRESENTATIVES, PARTNERS, ADVISORS, AGENT, SUCCESSORS, ASSIGNS, AND ATTORNEYS (COLLECTIVELY, THE "INDEMNIFIED PARTIES") HARMLESS FROM AND AGAINST ANY AND ALL LIABILITIES, OBLIGATIONS, LOSSES, DAMAGES, PENALTIES, ACTIONS, JUDGMENTS, SUITS, CLAIMS, COSTS, EXPENSES (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES AND LEGAL EXPENSES WHETHER OR NOT SUIT IS BROUGHT AND SETTLEMENT COSTS), AND DISBURSEMENTS OF ANY KIND OR NATURE WHATSOEVER WHICH MAY BE IMPOSED ON, INCURRED BY, OR ASSERTED AGAINST EACH INDEMNIFIED PARTY. IN ANY WAY RELATING TO OR ARISING OUT OF THE LOAN PAPERS OR ANY OF THE TRANSACTIONS CONTEMPLATED THEREIN (COLLECTIVELY, THE "INDEMNIFIED LIABILITIES"). TO THE EXTENT THAT ANY OF THE INDEMNIFIED LIABILITIES RESULTS, DIRECTLY OR INDIRECTLY, FROM ANY CLAIM MADE OR ACTION, SUIT, OR PROCEEDING COMMENCED BY OR ON BEHALF OF ANY PERSON OTHER THAN SUCH INDEMNIFIED PARTY; PROVIDED, HOWEVER, THAT ALTHOUGH EACH INDEMNIFIED PARTY SHALL HAVE THE RIGHT TO BE INDEMNIFIED FROM ITS OWN ORDINARY NEGLIGENCE, NO INDEMNIFIED PARTY SHALL HAVE THE RIGHT TO BE INDEMNIFIED HEREUNDER FOR ITS OWN FRAUD, GROSS NEGLIGENCE, OR WILLFUL MISCONDUCT. THE PROVISIONS OF AND UNDERTAKINGS AND INDEMNIFICATION SET FORTH IN THIS PARAGRAPH SHALL SURVIVE THE SATISFACTION AND PAYMENT OF THE OBLIGATION AND TERMINATION OF THIS AGREEMENT FOR THE PERIOD OF TIME SET FORTH IN ANY APPLICABLE STATUTE OF LIMITATIONS.

[Remainder of page left intentionally blank. Signature pages follow.]

EXECUTED as of the day and year first mentioned.

QWEST CORPORATION

By: /s/ Rafael Martinez-Chapman
Name: Rafael Martinez-Chapman
Title: Senior Vice President and Treasurer

[Signature Page to Amended and Restated Credit Agreement]

COBANK, ACB

as Administrative Agent and a Lender

By: /s/ Jacqueline Bove

Name: Jacqueline Bove

Title: Managing Director

[Signature Page to Amended and Restated Credit Agreement]

AGCOUNTRY FARM CREDIT SERVICES, FLCA

as a Voting Participant pursuant to Section 10.18

By: /s/ Warren Shoen

Name: Warren Shoen

Title: Senior Vice President

[Signature Page to Amended and Restated Credit Agreement]

AGFIRST FARM CREDIT BANK

as a Voting Participant pursuant to Section 10.18

By: /s/ Christopher Reynolds

Name: Christopher R. Reynolds

Title: Assistant Vice President

[Signature Page to Amended and Restated Credit Agreement]

COMPEER FINANCIAL, FLCA

as a Voting Participant pursuant to Section 10.18

By: /s/ Jeremy Voigts

Name: Jeremy Voigts

Title: Director, Capital Markets

[Signature Page to Amended and Restated Credit Agreement]

FARM CREDIT BANK OF TEXAS

as a Voting Participant pursuant to Section 10.18

By: /s/ Eric Estey

Name: Eric Estey

Title: VP

[Signature Page to Amended and Restated Credit Agreement]

FARM CREDIT SERVICES OF AMERICA, FLCA

as a Voting Participant pursuant to Section 10.18

By: /s/ Nicholas King

Name: Nicholas King

Title: Vice President

[Signature Page to Amended and Restated Credit Agreement]

FARM CREDIT MID-AMERICA, FLCA, f/k/a FARM CREDIT SERVICES OF MID-AMERICA, FLCA

as a Voting Participant pursuant to Section 10.18

By: /s/ Tabatha Hamilton

Name: Tabatha Hamilton

Title: Vice President Food and Agribusiness

[Signature Page to Amended and Restated Credit Agreement]

FARM CREDIT OF NEW MEXICO, FLCA, a wholly owned subsidiary of Farm Credit of New Mexico, ACA

as a Voting Participant pursuant to Section 10.18

By: /s/ Clarissa Shiver

Name: Clarissa Shiver

Title: VP Credit - Participations

[Signature Page to Amended and Restated Credit Agreement]

FARM CREDIT WEST, FLCA

as a Voting Participant pursuant to Section 10.18

By: /s/ Nathan Garcin

Name: Nathan Garcin

Title: Vice President

[Signature Page to Amended and Restated Credit Agreement]

NORTHWEST FARM CREDIT SERVICES, FLCA

as a Voting Participant pursuant to Section 10.18

By: /s/ Jeremy A. Roewe

Name: Jeremy A. Roewe

Title: Vice President

[Signature Page to Amended and Restated Credit Agreement]

Schedule 1.1 - Commitments

Lender	Commitment
CoBank, ACB	\$215,000,000

Schedule 3.3 – Guarantor Significant Subsidiaries

NONE

Schedule 3.12 – Transactions with Affiliates

NONE.

Schedule 3.17 – Business of Companies

The Borrower is an integrated communications company engaged primarily in providing an array of communications services to residential, business, governmental and wholesale customers. The Borrower's communications services include local, broadband, private line (including special access), network access, Ethernet, information technology, wireless and video services. In certain local and regional markets, the Borrower also provides local access and fiber transport services to competitive local exchange carriers.

Schedule 10.18- Voting Participants

<u>Voting Participant</u>	<u>Commitment</u>
AgCountry Farm Credit Services, FLCA	\$10,800,000
AgFirst Farm Credit Bank	\$13,200,000
Compeer Financial, FLCA	\$15,600,000
Farm Credit Bank of Texas	\$39,400,000
Farm Credit Services of America, FLCA	\$9,600,000
Farm Credit Services of Mid-America, FLCA	\$7,200,000
Farm Credit of New Mexico, FLCA	\$7,200,000
Farm Credit West, FLCA	\$6,000,000
Northwest Farm Credit Services, FLCA	\$6,000,000

FIRST SUPPLEMENTAL INDENTURE (this “First Supplemental Indenture”) dated as of March 2, 2020, among Level 3 Communications, LLC, a Delaware limited liability company (the “New Guarantor”), a direct or indirect subsidiary of Level 3 Parent, LLC (or its successor), a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 PARENT, LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”) on behalf of itself and the Guarantors (the “Existing Guarantors”), if any, under the Indenture referred to below, and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS, the Issuer and Level 3 Parent have heretofore executed and delivered to the Trustee an Indenture dated as of September 25, 2019 (the “Indenture”; capitalized terms used but not defined herein having the meanings assigned thereto in the Indenture), providing for the issuance of its 4.625% Senior Notes due 2027;

WHEREAS, the Indenture permits the New Guarantor to execute and deliver to the Trustee a supplemental indenture pursuant to which the New Guarantor shall unconditionally guarantee all the Issuer’s obligations under the Securities pursuant to a Guarantee on the terms and conditions set forth herein;

WHEREAS, the Guarantee contained in this First Supplemental Indenture shall constitute a “Restricted Subsidiary Guarantee”, and the New Guarantor shall constitute a “Guarantor”, for all purposes of the Indenture;

WHEREAS, pursuant to Section 801 and Section 1207 of the Indenture, the Trustee and the Issuer are authorized to execute and deliver this First Supplemental Indenture; and

WHEREAS, all acts and requirements necessary to make this First Supplemental Indenture the legal, valid and binding obligation of Level 3 Parent, the Issuer and the New Guarantor have been done.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, the New Guarantor, the Issuer, the Existing Guarantors and the Trustee mutually covenant and agree for the equal and ratable benefit of the Holders of the Securities as follows:

1. Agreement to Guaranty. The New Guarantor hereby agrees, jointly and severally with all the existing Guarantors, to unconditionally guarantee the Issuer’s obligations under the Securities and the Indenture on the terms and subject to the conditions set forth in Article Twelve of the Indenture and to be bound by all other applicable provisions of the Indenture and the Securities.

2. Successors and Assigns. This First Supplemental Indenture shall be binding upon the New Guarantor and its successors and assigns and shall inure to the benefit of the successors and assigns of the Trustee and the Holders and, in the event of any transfer or assignment of rights by any Holder or the Trustee, the rights and privileges conferred upon that party in the Indenture and in the Securities shall automatically extend to and be vested in such transferee or assignee, all subject to the terms and conditions of the Indenture.

3. No Waiver. Neither a failure nor a delay on the part of either the Trustee or the Holders in exercising any right, power or privilege under this First Supplemental Indenture, the Indenture or the Securities shall operate as a waiver thereof, nor shall a single or partial exercise thereof preclude any other or further exercise of any right, power or privilege. The rights, remedies and benefits of the Trustee and the Holders herein and therein expressly specified are cumulative and not exclusive of any other rights, remedies or benefits which either may have under this First Supplemental Indenture, the Indenture or the Securities at law, in equity, by statute or otherwise.

4. Modification. No modification, amendment or waiver of any provision of this First Supplemental Indenture, nor the consent to any departure by the New Guarantor therefrom, shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on the New Guarantor in any case shall entitle the New Guarantor to any other or further notice or demand in the same, similar or other circumstances.

5. Opinion of Counsel. Concurrently with the execution and delivery of this First Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this First Supplemental Indenture has been duly authorized, executed and delivered by each of the New Guarantor and the Issuer and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, the Guarantee of the New Guarantor is a legal, valid and binding obligation of the New Guarantor, enforceable against the New Guarantor in accordance with its terms.

6. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This First Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

7. Governing Law. **THIS FIRST SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

8. Counterparts. The parties may sign any number of copies of this First Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

9. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction thereof.

10. Trustee. The Trustee makes no representations as to the validity or sufficiency of this First Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, Level 3 Parent, the Existing Guarantors and the New Guarantor, and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this First Supplemental Indenture to be duly executed as of the date first above written.

LEVEL 3 COMMUNICATIONS
LLC,

By

/s/ Stacey W. Goff

Name: Stacey W. Goff

Title: Executive Vice President
and General Counsel

LEVEL 3 PARENT, LLC,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President
and Treasurer

LEVEL 3 FINANCING, INC., on
behalf of itself as the Issuer and the Existing
Guarantors, if any,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President
and Treasurer

THE BANK OF NEW YORK
MELLON TRUST COMPANY, N.A., as
Trustee,

By

/s/ Lawrence M. Kusch

Name: Lawrence M. Kusch

Title: Vice President

SECOND SUPPLEMENTAL INDENTURE (this “Supplemental Indenture”) dated as of March 2, 2020 among LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”), LEVEL 3 PARENT, LLC, a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 COMMUNICATIONS, LLC, a limited liability company (“Level 3 LLC”), and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS the Issuer, Level 3 Parent and the Trustee have heretofore executed and delivered (a) an Indenture dated as of September 25, 2019 (as amended, supplemented or otherwise modified from time to time, the “Indenture”; capitalized terms used but not defined herein have the meanings assigned thereto in the Indenture), providing for the issuance by the Issuer of its 4.625% Senior Notes due 2027 (the “Securities”), and (b) a First Supplemental Indenture dated March 2, 2020 pursuant to which Level 3 LLC has guaranteed the Issuer’s obligations under the Indenture (the “Subordinated Guarantee”);

WHEREAS the Issuer, Level 3 Parent, certain lenders (together with their successors and assigns and any future Lenders under and as defined in the Credit Agreement (as hereafter defined) (the “Lenders”) and Merrill Lynch Capital Corporation, as administrative agent and collateral agent (the “Administrative Agent”), have entered into a Credit Agreement dated as of March 13, 2007 (as amended and restated as of November 29, 2019, and as may be further amended or modified from time to time, the “Credit Agreement”), under which the Issuer has borrowed term loans in an aggregate principal amount of \$3,610,500,000 from the Lenders (the “Term Loans”);

WHEREAS the obligations of the Issuer under the Credit Agreement and the other Loan Documents (as defined therein) have been guaranteed by Level 3 LLC (subject to certain regulatory limitations that may be in effect from time to time);

WHEREAS the proceeds of the Term Loans have been advanced to Level 3 LLC under an intercompany demand note dated March 13, 2007, as amended and restated on November 29, 2019, in an initial principal amount of \$1,400,000,000 and subsequently increased to \$4,610,500,000, issued by Level 3 LLC to the Issuer (together with any additional loan proceeds note issued pursuant to Section 9.02 of the Credit Agreement, and as such note or any such additional note may be further amended or modified from time to time, the “Loan Proceeds Note”);

WHEREAS the Loan Proceeds Note has been pledged by the Issuer to the Collateral Agent (as defined in the Credit Agreement) in order to assure the Lenders against loss in respect of the obligations of the Issuer under the Credit Agreement;

WHEREAS pursuant to Section 1208 of the Indenture, the Trustee is authorized to enter into a supplemental indenture which subordinates in any bankruptcy, liquidation or winding up proceeding a guarantee of an Issuer Restricted Subsidiary as guarantor or borrower pursuant to the Indenture to the obligations of such Subsidiary under a Qualified Credit Facility;

WHEREAS upon the guarantee of the Securities by an Issuer Restricted Subsidiary (other than Level 3 LLC), the Issuer, Level 3 Parent, the Trustee and such Issuer Restricted Subsidiary shall enter into a supplemental indenture in substantially the form of this Second Supplemental Indenture pursuant to which such guarantee will be subordinated in any bankruptcy, liquidation or winding up proceeding to the obligations of such Issuer Restricted Subsidiary under the Loan Documents (as defined in the Credit Agreement);

WHEREAS the Credit Agreement constitutes a Qualified Credit Facility and the guarantee of the obligations under the Credit Agreement by Level 3 LLC and the issuance and pledge of the Loan Proceeds Note constitute Guarantees of a Qualified Credit Facility; and

WHEREAS pursuant to Section 801 and Section 1207 of the Indenture, the Trustee, Level 3 Parent, the Issuer and Level 3 LLC are authorized to execute and deliver this Second Supplemental Indenture;

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, Level 3 Parent, the Issuer, Level 3 LLC and the Trustee mutually covenant and agree for the equal and ratable benefit of the holders of the Securities as follows:

ARTICLE I

Subordination

SECTION 1.1. Subordination. The Trustee hereby agrees that all obligations in respect of any amounts payable by Level 3 LLC pursuant to the Subordinated Guarantee, including the guarantee of the payment of principal, premium (if any), interest or all other amounts payable in respect of the Securities (the “Subordinated Obligations”), shall be subordinate and junior in right of payment, to the extent and in the manner provided in the Indenture (as supplemented by this Second Supplemental Indenture), to the prior payment in full in cash of all obligations (including without limitation the Obligations (as defined in the Credit Agreement)) of Level 3 LLC under or in respect of the Loan Documents (as defined in the Credit Agreement) as in effect from time to time and the Loan Proceeds Note, including the payment of principal, premium (if any), interest (including interest arising after the commencement of a bankruptcy or other proceeding, whether or not such a claim is permitted in such proceeding), the guarantees thereof or all other amounts payable thereunder (the “Senior Obligations”).

SECTION 1.2. Subordination in the Event of Dissolution or Insolvency of Level 3 LLC. Upon any distribution of assets of Level 3 LLC in connection with its dissolution or insolvency or upon any dissolution, winding up, liquidation or reorganization of Level 3 LLC, whether in bankruptcy, insolvency, reorganization, arrangement or receivership or similar

proceedings, or upon any assignment for the benefit of creditors or any other marshaling of the assets and liabilities of Level 3 LLC:

(a) the holders of the Senior Obligations (the “Senior Creditors”) shall first be entitled to receive payment in full in cash of the Senior Obligations in accordance with the terms of such Senior Obligations before the Securityholders shall be entitled to receive any payment on account of the Subordinated Obligations owed by Level 3 LLC in respect of the Securities, whether of principal, premium (if any), interest, pursuant to the Subordinated Guarantee or otherwise; and

(b) any payment by, or distribution of the assets of, Level 3 LLC of any kind or character, whether in cash, property or securities, to which the Securityholders would be entitled except for the provisions of Section 1208 of the Indenture and this Second Supplemental Indenture shall be paid or delivered by the Person making such payment or distribution (whether a trustee in bankruptcy, a receiver, custodian or liquidating trustee or otherwise) directly to the Administrative Agent or the Senior Creditors to the extent necessary to make payment in full in cash of all Senior Obligations remaining unpaid, after giving effect to any concurrent payment or distribution to the Administrative Agent or the Senior Creditors in respect of the Senior Obligations.

SECTION 1.3. Certain Payments Held in Trust. In the event that any payment by, or distribution of the assets of, Level 3 LLC of any kind or character, whether in cash, property or securities, and whether directly or otherwise, shall be received by or on behalf of the Trustee or the Securityholders at a time when such payment is prohibited by or contrary to the agreements set forth in this Second Supplemental Indenture, such payment or distribution shall be held in trust for the benefit of, and shall be paid over to, the Administrative Agent or the Senior Creditors to the extent necessary to make payment in full in cash of all Senior Obligations remaining unpaid, after giving effect to any concurrent payment or distribution to the Administrative Agent or the Senior Creditors in respect of such Senior Obligations.

SECTION 1.4 Trustee Not Fiduciary. The Trustee shall not be deemed to owe any fiduciary duty to the Senior Creditors and shall not be liable to any such Senior Creditor if the Trustee shall in good faith mistakenly pay over or distribute to the Securityholders or to the Issuer or to any other person cash, property or securities to which any holders of Senior Obligations shall be entitled by virtue of this Article or otherwise. With respect to the holders of Senior Obligations, the Trustee undertakes to perform or to observe only such of its covenants or obligations as are specifically set forth in this Article and no implied covenants or obligations with respect to holders of Senior Obligations shall be read into this Second Supplemental Indenture against the Trustee.

SECTION 1.5. Legend. Any and all instruments or records now or hereafter creating or evidencing the Subordinated Obligations, whether upon refunding, extension, renewal, refinancing, replacement or otherwise, shall contain the following legend:

“Notwithstanding anything contained herein to the contrary, neither the principal of nor the interest on, nor any other amounts payable in respect of, the

indebtedness created or evidenced by this instrument or record shall be paid or payable with or by the funds provided by Level 3 Communications, LLC, except to the extent permitted under the First Supplemental Indenture dated March 2, 2020, among Level 3 Parent, LLC, Level 3 Communications, LLC, Level 3 Financing, Inc. and the Trustee, which First Supplemental Indenture is incorporated herein with the same effect as if fully set forth herein.”

SECTION 1.6. Obligations Hereunder Not Affected. So long as the Credit Agreement shall constitute a Qualified Credit Facility, this Second Supplemental Indenture shall continue to be effective or be reinstated, as the case may be, if at any time any payment of the Senior Obligations or any part thereof shall be rescinded or must otherwise be returned by the Administrative Agent and the Senior Creditors upon the insolvency, bankruptcy or reorganization of Level 3 LLC or otherwise, all as though such payment had not been made.

ARTICLE II

Miscellaneous

SECTION 2.1. Governing Law. **THIS SECOND SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

SECTION 2.2. Modification. No modification, amendment or waiver of any provision of this Second Supplemental Indenture shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given.

SECTION 2.3. Opinion of Counsel. Concurrently with the execution and delivery of this Second Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this Second Supplemental Indenture has been duly authorized, executed and delivered by each of Level 3 Parent, the Issuer and Level 3 LLC and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, this Second Supplemental Indenture is a legal, valid and binding obligation of Level 3 Parent, the Issuer and Level 3 LLC, enforceable against each of them in accordance with its terms.

SECTION 2.4. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This Second Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

SECTION 2.5. Counterparts. The parties may sign any number of copies of this Second Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

SECTION 2.6. Headings. Article and Section headings used herein are for convenience of reference only, are not part of this Second Supplemental Indenture and are not to affect the construction of, or to be taken into consideration in interpreting, this Second Supplemental Indenture.

SECTION 2.7. Trustee. The Trustee makes no representation as to the validity or sufficiency of this Second Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, the Level 3 Parent, Level 3 LLC and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Second Supplemental Indenture to be duly executed as of the date first above written.

LEVEL 3 PARENT, LLC,

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-Chapman

Title: Senior Vice President and
Treasurer

LEVEL 3 FINANCING, INC.,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-
Chapman

Title: Senior Vice President and
Treasurer

LEVEL 3 COMMUNICATIONS,
LLC,

By

/s/ Stacey W. Goff

Name: Stacey W. Goff

Title: Executive Vice President
and General Counsel

THE BANK OF NEW YORK
MELLON TRUST COMPANY, N.A., as
Trustee,

By

/s/ Lawrence M. Kusch

Name: Lawrence M. Kusch

Title: Vice President

EXECUTION VERSION

SUPPLEMENTAL INDENTURE (this “Supplemental Indenture”) dated as of April 15, 2020 among LEVEL 3 COMMUNICATIONS, LLC, a Delaware limited liability company, BROADWING, LLC, a Delaware limited liability company, BROADWING COMMUNICATIONS, LLC, a Delaware limited liability company, GLOBAL CROSSING TELECOMMUNICATIONS, INC., a Michigan corporation, LEVEL 3 TELECOM HOLDINGS, LLC, a Delaware limited liability company, TELCOVE OPERATIONS, LLC, a Delaware limited liability company, and WITEL COMMUNICATIONS, LLC, a Delaware limited liability company (each a “New Guarantor” and collectively, the “New Guarantors”), LEVEL 3 PARENT, LLC, a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”), on behalf of itself and the existing guarantors (other than Level 3 Parent) (the “Existing Guarantors”), under the Indenture referred to below, and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee and collateral agent under the Indenture referred to below (the “Trustee”).

WITNESSETH:

WHEREAS, the Issuer, Level 3 Parent and the other Guarantors party thereto have heretofore executed and delivered to the Trustee an Indenture dated as of November 29, 2019 (the “Indenture”; capitalized terms used but not defined herein having the meanings assigned thereto in the Indenture), providing for the issuance of its 3.400% Senior Secured Notes due 2027;

WHEREAS, the Indenture permits the New Guarantors to execute and deliver to the Trustee a supplemental indenture pursuant to which the New Guarantors shall unconditionally guarantee all the Issuer’s obligations under the Securities pursuant to a Guarantee on the terms and conditions set forth herein;

WHEREAS, the Guarantee contained in this Supplemental Indenture shall constitute a “Note Guarantee”, and each of the New Guarantors shall constitute a “Guarantor”, for all purposes of the Indenture;

WHEREAS, pursuant to Section 801 and Section 1207 of the Indenture, the Trustee and the Issuer are authorized to execute and deliver this Supplemental Indenture; and

WHEREAS, all acts and requirements necessary to make this Supplemental Indenture the legal, valid and binding obligation of Level 3 Parent, the Issuer and the New Guarantors have been done.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, each New Guarantor, Level 3

Parent, the Issuer, the Existing Guarantors and the Trustee mutually covenant and agree for the equal and ratable benefit of the Holders of the Securities as follows:

1. Agreement to Guaranty. Each New Guarantor hereby agrees, jointly and severally with all the existing Guarantors, to unconditionally guarantee the Issuer's obligations under the Securities and the Indenture on the terms and subject to the conditions set forth in Article Twelve of the Indenture and to be bound by all other applicable provisions of the Indenture and the Securities.

2. Successors and Assigns. This Supplemental Indenture shall be binding upon each New Guarantor and its successors and assigns and shall inure to the benefit of the successors and assigns of the Trustee and the Holders and, in the event of any transfer or assignment of rights by any Holder or the Trustee, the rights and privileges conferred upon that party in the Indenture and in the Securities shall automatically extend to and be vested in such transferee or assignee, all subject to the terms and conditions of the Indenture.

3. No Waiver. Neither a failure nor a delay on the part of either the Trustee or the Holders in exercising any right, power or privilege under this Supplemental Indenture, the Indenture or the Securities shall operate as a waiver thereof, nor shall a single or partial exercise thereof preclude any other or further exercise of any right, power or privilege. The rights, remedies and benefits of the Trustee and the Holders herein and therein expressly specified are cumulative and not exclusive of any other rights, remedies or benefits which either may have under this Supplemental Indenture, the Indenture or the Securities at law, in equity, by statute or otherwise.

4. Modification. No modification, amendment or waiver of any provision of this Supplemental Indenture, nor the consent to any departure by any New Guarantor therefrom, shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on any New Guarantor in any case shall entitle any such New Guarantor to any other or further notice or demand in the same, similar or other circumstances.

5. Opinion of Counsel. Concurrently with the execution and delivery of this Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this Supplemental Indenture has been duly authorized, executed and delivered by the Issuer and each New Guarantor and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, the Guarantee of each New Guarantor is a legal, valid and binding obligation of such New Guarantor, enforceable against such New Guarantor in accordance with its terms.

6. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This Supplemental

Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

7. Governing Law. **THIS SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

8. Counterparts. The parties may sign any number of copies of this Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

9. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction thereof.

10. Trustee. The Trustee makes no representations as to the validity or sufficiency of this Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, Level 3 Parent, the Existing Guarantors and the New Guarantors, and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed as of the date first above written.

BROADWING, LLC, as Guarantor
By
/s/ Rafael Martinez-Chapman
Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

BROADWING
COMMUNICATIONS, LLC, as Guarantor
By
/s/ Rafael Martinez-
Chapman
Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

GLOBAL CROSSING
TELECOMMUNICATIONS, INC., as
Guarantor
By
/s/ Rafael Martinez-Chapman
Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

[Signature page to 3.400% Notes due 2027 Supplemental Indenture]

LEVEL 3 TELECOM HOLDINGS,
LLC, as Guarantor

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

TELCOVE OPERATIONS, LLC, as
Guarantor

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

WILTEL COMMUNICATIONS,
LLC, as Guarantor

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

LEVEL 3 PARENT, LLC

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

LEVEL 3 FINANCING, INC., on
behalf of itself as the Issuer and the other
Existing Guarantors

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-
Chapman

Title: Senior Vice President &
Treasurer

THE BANK OF NEW YORK
MELLON TRUST COMPANY, N.A., as
Trustee and as Note Collateral Agent

By

/s/ Raymond Torres

Name: Raymond Torres

Title: Vice President

SUPPLEMENTAL INDENTURE (this “Supplemental Indenture”) dated as of April 15, 2020 among LEVEL 3 COMMUNICATIONS, LLC, a Delaware limited liability company, BROADWING, LLC, a Delaware limited liability company, BROADWING COMMUNICATIONS, LLC, a Delaware limited liability company, GLOBAL CROSSING TELECOMMUNICATIONS, INC., a Michigan corporation, LEVEL 3 TELECOM HOLDINGS, LLC, a Delaware limited liability company, TELCOVE OPERATIONS, LLC, a Delaware limited liability company, and WITEL COMMUNICATIONS, LLC, a Delaware limited liability company (each a “New Guarantor” and collectively, the “New Guarantors”), LEVEL 3 PARENT, LLC, a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”), on behalf of itself and the existing guarantors (other than Level 3 Parent) (the “Existing Guarantors”), under the Indenture referred to below, and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee and collateral agent under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS, the Issuer, Level 3 Parent and the other Guarantors party thereto have heretofore executed and delivered to the Trustee an Indenture dated as of November 29, 2019 (the “Indenture”; capitalized terms used but not defined herein having the meanings assigned thereto in the Indenture), providing for the issuance of its 3.875% Senior Secured Notes due 2029;

WHEREAS, the Indenture permits the New Guarantors to execute and deliver to the Trustee a supplemental indenture pursuant to which the New Guarantors shall unconditionally guarantee all the Issuer’s obligations under the Securities pursuant to a Guarantee on the terms and conditions set forth herein;

WHEREAS, the Guarantee contained in this Supplemental Indenture shall constitute a “Note Guarantee”, and each of the New Guarantors shall constitute a “Guarantor”, for all purposes of the Indenture;

WHEREAS, pursuant to Section 801 and Section 1207 of the Indenture, the Trustee and the Issuer are authorized to execute and deliver this Supplemental Indenture; and

WHEREAS, all acts and requirements necessary to make this Supplemental Indenture the legal, valid and binding obligation of Level 3 Parent, the Issuer and the New Guarantors have been done.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, each New Guarantor, Level 3 Parent, the Issuer, the Existing Guarantors and the Trustee mutually covenant and agree for the equal and ratable benefit of the Holders of the Securities as follows:

1. Agreement to Guaranty. Each New Guarantor hereby agrees, jointly and severally with all the existing Guarantors, to unconditionally guarantee the Issuer's obligations under the Securities and the Indenture on the terms and subject to the conditions set forth in Article Twelve of the Indenture and to be bound by all other applicable provisions of the Indenture and the Securities.

2. Successors and Assigns. This Supplemental Indenture shall be binding upon each New Guarantor and its successors and assigns and shall inure to the benefit of the successors and assigns of the Trustee and the Holders and, in the event of any transfer or assignment of rights by any Holder or the Trustee, the rights and privileges conferred upon that party in the Indenture and in the Securities shall automatically extend to and be vested in such transferee or assignee, all subject to the terms and conditions of the Indenture.

3. No Waiver. Neither a failure nor a delay on the part of either the Trustee or the Holders in exercising any right, power or privilege under this Supplemental Indenture, the Indenture or the Securities shall operate as a waiver thereof, nor shall a single or partial exercise thereof preclude any other or further exercise of any right, power or privilege. The rights, remedies and benefits of the Trustee and the Holders herein and therein expressly specified are cumulative and not exclusive of any other rights, remedies or benefits which either may have under this Supplemental Indenture, the Indenture or the Securities at law, in equity, by statute or otherwise.

4. Modification. No modification, amendment or waiver of any provision of this Supplemental Indenture, nor the consent to any departure by any New Guarantor therefrom, shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on any New Guarantor in any case shall entitle any such New Guarantor to any other or further notice or demand in the same, similar or other circumstances.

5. Opinion of Counsel. Concurrently with the execution and delivery of this Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this Supplemental Indenture has been duly authorized, executed and delivered by the Issuer and each New Guarantor and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, the Guarantee of each New Guarantor is a legal, valid and binding obligation of such New Guarantor, enforceable against such New Guarantor in accordance with its terms.

6. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

7. Governing Law. **THIS SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

8. Counterparts. The parties may sign any number of copies of this Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

9. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction thereof.

10. Trustee. The Trustee makes no representations as to the validity or sufficiency of this Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, Level 3 Parent, the Existing Guarantors and the New Guarantors, and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed as of the date first above written.

BROADWING, LLC, as Guarantor
By
/s/ Rafael Martinez-Chapman
Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

BROADWING
COMMUNICATIONS, LLC, as Guarantor
By
/s/ Rafael Martinez-
Chapman
Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

GLOBAL CROSSING
TELECOMMUNICATIONS, INC., as
Guarantor
By
/s/ Rafael Martinez-Chapman
Name: Rafael Martinez-
Chapman
Title: Senior Vice President &
Treasurer

[Signature page to 3.875% Notes due 2029 Supplemental Indenture]

LEVEL 3 TELECOM HOLDINGS,
LLC, as Guarantor

By

/s/ Rafael Martinez-

Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President &
Treasurer

TELCOVE OPERATIONS, LLC, as
Guarantor

By

/s/ Rafael Martinez-

Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President &
Treasurer

WILTEL COMMUNICATIONS,
LLC, as Guarantor

By

/s/ Rafael Martinez-

Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President &
Treasurer

LEVEL 3 PARENT, LLC

By

/s/ Rafael Martinez-

Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President &
Treasurer

LEVEL 3 FINANCING, INC., on
behalf of itself as the Issuer and the other
Existing Guarantors

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-
Chapman

Title: Senior Vice President &
Treasurer

THE BANK OF NEW YORK
MELLON TRUST COMPANY, N.A., as
Trustee and as Note Collateral Agent

By

 /s/ Raymond Torres

Name: Raymond Torres

Title: Vice President

FIRST SUPPLEMENTAL INDENTURE (this “First Supplemental Indenture”) dated as of December 21, 2020, among Level 3 Communications, LLC, a Delaware limited liability company (the “New Guarantor”), a direct or indirect subsidiary of Level 3 Parent, LLC (or its successor), a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 PARENT, LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”) on behalf of itself and the Guarantors (the “Existing Guarantors”), if any, under the Indenture referred to below, and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS, the Issuer and Level 3 Parent have heretofore executed and delivered to the Trustee an Indenture dated as of June 15, 2020 (the “Indenture”; capitalized terms used but not defined herein having the meanings assigned thereto in the Indenture), providing for the issuance of its 4.250% Senior Notes due 2028;

WHEREAS, the Indenture permits the New Guarantor to execute and deliver to the Trustee a supplemental indenture pursuant to which the New Guarantor shall unconditionally guarantee all the Issuer’s obligations under the Securities pursuant to a Guarantee on the terms and conditions set forth herein;

WHEREAS, the Guarantee contained in this First Supplemental Indenture shall constitute a “Restricted Subsidiary Guarantee”, and the New Guarantor shall constitute a “Guarantor”, for all purposes of the Indenture;

WHEREAS, pursuant to Section 801 and Section 1207 of the Indenture, the Trustee and the Issuer are authorized to execute and deliver this First Supplemental Indenture; and

WHEREAS, all acts and requirements necessary to make this First Supplemental Indenture the legal, valid and binding obligation of Level 3 Parent, the Issuer and the New Guarantor have been done.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, the New Guarantor, the Issuer, the Existing Guarantors and the Trustee mutually covenant and agree for the equal and ratable benefit of the Holders of the Securities as follows:

1. Agreement to Guaranty. The New Guarantor hereby agrees, jointly and severally with all the existing Guarantors, to unconditionally guarantee the Issuer’s obligations under the Securities and the Indenture on the terms and subject to the conditions set forth in Article Twelve of the Indenture and to be bound by all other applicable provisions of the Indenture and the Securities.

2. Successors and Assigns. This First Supplemental Indenture shall be binding upon the New Guarantor and its successors and assigns and shall inure to the benefit of the successors and assigns of the Trustee and the Holders and, in the event of any transfer or assignment of rights by any Holder or the Trustee, the rights and privileges conferred upon that party in the Indenture and in the Securities shall automatically extend to and be vested in such transferee or assignee, all subject to the terms and conditions of the Indenture.

3. No Waiver. Neither a failure nor a delay on the part of either the Trustee or the Holders in exercising any right, power or privilege under this First Supplemental Indenture, the Indenture or the Securities shall operate as a waiver thereof, nor shall a single or partial exercise thereof preclude any other or further exercise of any right, power or privilege. The rights, remedies and benefits of the Trustee and the Holders herein and therein expressly specified are cumulative and not exclusive of any other rights, remedies or benefits which either may have under this First Supplemental Indenture, the Indenture or the Securities at law, in equity, by statute or otherwise.

4. Modification. No modification, amendment or waiver of any provision of this First Supplemental Indenture, nor the consent to any departure by the New Guarantor therefrom, shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on the New Guarantor in any case shall entitle the New Guarantor to any other or further notice or demand in the same, similar or other circumstances.

5. Opinion of Counsel. Concurrently with the execution and delivery of this First Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this First Supplemental Indenture has been duly authorized, executed and delivered by each of the New Guarantor and the Issuer and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, the Guarantee of the New Guarantor is a legal, valid and binding obligation of the New Guarantor, enforceable against the New Guarantor in accordance with its terms.

6. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This First Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

7. Governing Law. **THIS FIRST SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

8. Counterparts. The parties may sign any number of copies of this First Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

9. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction thereof.

10. Trustee. The Trustee makes no representations as to the validity or sufficiency of this First Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, Level 3 Parent, the Existing Guarantors and the New Guarantor, and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this First Supplemental Indenture to be duly executed as of the date first above written.

LEVEL 3 COMMUNICATIONS
LLC,

By

/s/ Stacey W. Goff

Name: Stacey W. Goff

Title: Executive Vice President
and General Counsel

LEVEL 3 PARENT, LLC,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President
and Treasurer

LEVEL 3 FINANCING, INC., on
behalf of itself as the Issuer and the Existing
Guarantors, if any,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President
and Treasurer

THE BANK OF NEW YORK
MELLON TRUST COMPANY, N.A., as
Trustee,

By

/s/ Julie Hoffman-Ramos

Name: Julie Hoffman-Ramos

Title: Vice President

SECOND SUPPLEMENTAL INDENTURE (this “Supplemental Indenture”) dated as of December 21, 2020 among LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”), LEVEL 3 PARENT, LLC, a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 COMMUNICATIONS, LLC, a limited liability company (“Level 3 LLC”), and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS the Issuer, Level 3 Parent and the Trustee have heretofore executed and delivered (a) an Indenture dated as of June 15, 2020 (as amended, supplemented or otherwise modified from time to time, the “Indenture”; capitalized terms used but not defined herein have the meanings assigned thereto in the Indenture), providing for the issuance by the Issuer of its 4.250% Senior Notes due 2028 (the “Securities”), and (b) a First Supplemental Indenture dated December 21, 2020 pursuant to which Level 3 LLC has guaranteed the Issuer’s obligations under the Indenture (the “Subordinated Guarantee”);

WHEREAS the Issuer, Level 3 Parent, certain lenders (together with their successors and assigns and any future Lenders under and as defined in the Credit Agreement (as hereafter defined) (the “Lenders”) and Merrill Lynch Capital Corporation, as administrative agent and collateral agent (the “Administrative Agent”), have entered into a Credit Agreement dated as of March 13, 2007 (as amended and restated as of November 29, 2019, and as may be further amended or modified from time to time, the “Credit Agreement”), under which the Issuer has borrowed term loans in an aggregate principal amount of \$3,610,500,000 from the Lenders (the “Term Loans”);

WHEREAS the obligations of the Issuer under the Credit Agreement and the other Loan Documents (as defined therein) have been guaranteed by Level 3 LLC (subject to certain regulatory limitations that may be in effect from time to time);

WHEREAS the proceeds of the Term Loans have been advanced to Level 3 LLC under an intercompany demand note dated March 13, 2007, as amended and restated on November 29, 2019, in an initial principal amount of \$1,400,000,000 and subsequently increased to \$4,610,500,000, issued by Level 3 LLC to the Issuer (together with any additional loan proceeds note issued pursuant to Section 9.02 of the Credit Agreement, and as such note or any such additional note may be further amended or modified from time to time, the “Loan Proceeds Note”);

WHEREAS the Loan Proceeds Note has been pledged by the Issuer to the Collateral Agent (as defined in the Credit Agreement) in order to assure the Lenders against loss in respect of the obligations of the Issuer under the Credit Agreement;

WHEREAS pursuant to Section 1208 of the Indenture, the Trustee is authorized to enter into a supplemental indenture which subordinates in any bankruptcy, liquidation or winding up proceeding a guarantee of an Issuer Restricted Subsidiary as guarantor or borrower pursuant to the Indenture to the obligations of such Subsidiary under a Qualified Credit Facility;

WHEREAS upon the guarantee of the Securities by an Issuer Restricted Subsidiary (other than Level 3 LLC), the Issuer, Level 3 Parent, the Trustee and such Issuer Restricted Subsidiary shall enter into a supplemental indenture in substantially the form of this Second Supplemental Indenture pursuant to which such guarantee will be subordinated in any bankruptcy, liquidation or winding up proceeding to the obligations of such Issuer Restricted Subsidiary under the Loan Documents (as defined in the Credit Agreement);

WHEREAS the Credit Agreement constitutes a Qualified Credit Facility and the guarantee of the obligations under the Credit Agreement by Level 3 LLC and the issuance and pledge of the Loan Proceeds Note constitute Guarantees of a Qualified Credit Facility; and

WHEREAS pursuant to Section 801 and Section 1207 of the Indenture, the Trustee, Level 3 Parent, the Issuer and Level 3 LLC are authorized to execute and deliver this Second Supplemental Indenture;

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, Level 3 Parent, the Issuer, Level 3 LLC and the Trustee mutually covenant and agree for the equal and ratable benefit of the holders of the Securities as follows:

ARTICLE I

Subordination

SECTION 1.1. Subordination. The Trustee hereby agrees that all obligations in respect of any amounts payable by Level 3 LLC pursuant to the Subordinated Guarantee, including the guarantee of the payment of principal, premium (if any), interest or all other amounts payable in respect of the Securities (the “Subordinated Obligations”), shall be subordinate and junior in right of payment, to the extent and in the manner provided in the Indenture (as supplemented by this Second Supplemental Indenture), to the prior payment in full in cash of all obligations (including without limitation the Obligations (as defined in the Credit Agreement)) of Level 3 LLC under or in respect of the Loan Documents (as defined in the Credit Agreement) as in effect from time to time and the Loan Proceeds Note, including the payment of principal, premium (if any), interest (including interest arising after the commencement of a bankruptcy or other proceeding, whether or not such a claim is permitted in such proceeding), the guarantees thereof or all other amounts payable thereunder (the “Senior Obligations”).

SECTION 1.2. Subordination in the Event of Dissolution or Insolvency of Level 3 LLC. Upon any distribution of assets of Level 3 LLC in connection with its dissolution or insolvency or upon any dissolution, winding up, liquidation or reorganization of Level 3 LLC, whether in bankruptcy, insolvency, reorganization, arrangement or receivership or similar

proceedings, or upon any assignment for the benefit of creditors or any other marshaling of the assets and liabilities of Level 3 LLC:

(a) the holders of the Senior Obligations (the “Senior Creditors”) shall first be entitled to receive payment in full in cash of the Senior Obligations in accordance with the terms of such Senior Obligations before the Securityholders shall be entitled to receive any payment on account of the Subordinated Obligations owed by Level 3 LLC in respect of the Securities, whether of principal, premium (if any), interest, pursuant to the Subordinated Guarantee or otherwise; and

(b) any payment by, or distribution of the assets of, Level 3 LLC of any kind or character, whether in cash, property or securities, to which the Securityholders would be entitled except for the provisions of Section 1208 of the Indenture and this Second Supplemental Indenture shall be paid or delivered by the Person making such payment or distribution (whether a trustee in bankruptcy, a receiver, custodian or liquidating trustee or otherwise) directly to the Administrative Agent or the Senior Creditors to the extent necessary to make payment in full in cash of all Senior Obligations remaining unpaid, after giving effect to any concurrent payment or distribution to the Administrative Agent or the Senior Creditors in respect of the Senior Obligations.

SECTION 1.3. Certain Payments Held in Trust. In the event that any payment by, or distribution of the assets of, Level 3 LLC of any kind or character, whether in cash, property or securities, and whether directly or otherwise, shall be received by or on behalf of the Trustee or the Securityholders at a time when such payment is prohibited by or contrary to the agreements set forth in this Second Supplemental Indenture, such payment or distribution shall be held in trust for the benefit of, and shall be paid over to, the Administrative Agent or the Senior Creditors to the extent necessary to make payment in full in cash of all Senior Obligations remaining unpaid, after giving effect to any concurrent payment or distribution to the Administrative Agent or the Senior Creditors in respect of such Senior Obligations.

SECTION 1.4 Trustee Not Fiduciary. The Trustee shall not be deemed to owe any fiduciary duty to the Senior Creditors and shall not be liable to any such Senior Creditor if the Trustee shall in good faith mistakenly pay over or distribute to the Securityholders or to the Issuer or to any other person cash, property or securities to which any holders of Senior Obligations shall be entitled by virtue of this Article or otherwise. With respect to the holders of Senior Obligations, the Trustee undertakes to perform or to observe only such of its covenants or obligations as are specifically set forth in this Article and no implied covenants or obligations with respect to holders of Senior Obligations shall be read into this Second Supplemental Indenture against the Trustee.

SECTION 1.5. Legend. Any and all instruments or records now or hereafter creating or evidencing the Subordinated Obligations, whether upon refunding, extension, renewal, refinancing, replacement or otherwise, shall contain the following legend:

“Notwithstanding anything contained herein to the contrary, neither the principal of nor the interest on, nor any other amounts payable in respect of, the

indebtedness created or evidenced by this instrument or record shall be paid or payable with or by the funds provided by Level 3 Communications, LLC, except to the extent permitted under the First Supplemental Indenture dated December [●], 2020, among Level 3 Parent, LLC, Level 3 Communications, LLC, Level 3 Financing, Inc. and the Trustee, which First Supplemental Indenture is incorporated herein with the same effect as if fully set forth herein.”

SECTION 1.6. Obligations Hereunder Not Affected. So long as the Credit Agreement shall constitute a Qualified Credit Facility, this Second Supplemental Indenture shall continue to be effective or be reinstated, as the case may be, if at any time any payment of the Senior Obligations or any part thereof shall be rescinded or must otherwise be returned by the Administrative Agent and the Senior Creditors upon the insolvency, bankruptcy or reorganization of Level 3 LLC or otherwise, all as though such payment had not been made.

SECTION 1.7. Rights of Trustee Not Subordinated. Notwithstanding anything to the contrary contained herein, in no event shall anything contained herein apply to claims of or payments to the Trustee under or pursuant to Section 607 of the Indenture; it being understood that no such claims shall be subject to the subordination set forth in this Second Supplemental Indenture.

ARTICLE II

Miscellaneous

SECTION 2.1. Governing Law. **THIS SECOND SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

SECTION 2.2. Modification. No modification, amendment or waiver of any provision of this Second Supplemental Indenture shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given.

SECTION 2.3. Opinion of Counsel. Concurrently with the execution and delivery of this Second Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this Second Supplemental Indenture has been duly authorized, executed and delivered by each of Level 3 Parent, the Issuer and Level 3 LLC and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, this Second Supplemental Indenture is a legal, valid and binding obligation of Level 3 Parent, the Issuer and Level 3 LLC, enforceable against each of them in accordance with its terms.

SECTION 2.4. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This Second Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

SECTION 2.5. Counterparts. The parties may sign any number of copies of this Second Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

SECTION 2.6. Headings. Article and Section headings used herein are for convenience of reference only, are not part of this Second Supplemental Indenture and are not to affect the construction of, or to be taken into consideration in interpreting, this Second Supplemental Indenture.

SECTION 2.7. Trustee. The Trustee makes no representation as to the validity or sufficiency of this Second Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, the Level 3 Parent, Level 3 LLC and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Second Supplemental Indenture to be duly executed as of the date first above written.

LEVEL 3 PARENT, LLC,

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-Chapman

Title: Senior Vice President and
Treasurer

LEVEL 3 FINANCING, INC.,

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-Chapman

Title: Senior Vice President and
Treasurer

LEVEL 3 COMMUNICATIONS, LLC,

By

/s/ Stacey W. Goff

Name: Stacey W. Goff

Title: Executive Vice President &
General Counsel

THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A., as Trustee,

By

/s/ Julie Hoffman-Ramos

Name: Julie Hoffman-Ramos

Title: Vice President

FIRST SUPPLEMENTAL INDENTURE (this “First Supplemental Indenture”) dated as of December 21, 2020, among Level 3 Communications, LLC, a Delaware limited liability company (the “New Guarantor”), a direct or indirect subsidiary of Level 3 Parent, LLC (or its successor), a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 PARENT, LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”) on behalf of itself and the Guarantors (the “Existing Guarantors”), if any, under the Indenture referred to below, and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS, the Issuer and Level 3 Parent have heretofore executed and delivered to the Trustee an Indenture dated as of August 12, 2020 (the “Indenture”; capitalized terms used but not defined herein having the meanings assigned thereto in the Indenture), providing for the issuance of its 3.625% Senior Notes due 2029;

WHEREAS, the Indenture permits the New Guarantor to execute and deliver to the Trustee a supplemental indenture pursuant to which the New Guarantor shall unconditionally guarantee all the Issuer’s obligations under the Securities pursuant to a Guarantee on the terms and conditions set forth herein;

WHEREAS, the Guarantee contained in this First Supplemental Indenture shall constitute a “Restricted Subsidiary Guarantee”, and the New Guarantor shall constitute a “Guarantor”, for all purposes of the Indenture;

WHEREAS, pursuant to Section 801 and Section 1207 of the Indenture, the Trustee and the Issuer are authorized to execute and deliver this First Supplemental Indenture; and

WHEREAS, all acts and requirements necessary to make this First Supplemental Indenture the legal, valid and binding obligation of Level 3 Parent, the Issuer and the New Guarantor have been done.

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, the New Guarantor, the Issuer, the Existing Guarantors and the Trustee mutually covenant and agree for the equal and ratable benefit of the Holders of the Securities as follows:

1. Agreement to Guaranty. The New Guarantor hereby agrees, jointly and severally with all the existing Guarantors, to unconditionally guarantee the Issuer’s obligations under the Securities and the Indenture on the terms and subject to the conditions set forth in Article Twelve of the Indenture and to be bound by all other applicable provisions of the Indenture and the Securities.

2. Successors and Assigns. This First Supplemental Indenture shall be binding upon the New Guarantor and its successors and assigns and shall inure to the benefit of the successors and assigns of the Trustee and the Holders and, in the event of any transfer or assignment of rights by any Holder or the Trustee, the rights and privileges conferred upon that party in the Indenture and in the Securities shall automatically extend to and be vested in such transferee or assignee, all subject to the terms and conditions of the Indenture.

3. No Waiver. Neither a failure nor a delay on the part of either the Trustee or the Holders in exercising any right, power or privilege under this First Supplemental Indenture, the Indenture or the Securities shall operate as a waiver thereof, nor shall a single or partial exercise thereof preclude any other or further exercise of any right, power or privilege. The rights, remedies and benefits of the Trustee and the Holders herein and therein expressly specified are cumulative and not exclusive of any other rights, remedies or benefits which either may have under this First Supplemental Indenture, the Indenture or the Securities at law, in equity, by statute or otherwise.

4. Modification. No modification, amendment or waiver of any provision of this First Supplemental Indenture, nor the consent to any departure by the New Guarantor therefrom, shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on the New Guarantor in any case shall entitle the New Guarantor to any other or further notice or demand in the same, similar or other circumstances.

5. Opinion of Counsel. Concurrently with the execution and delivery of this First Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this First Supplemental Indenture has been duly authorized, executed and delivered by each of the New Guarantor and the Issuer and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, the Guarantee of the New Guarantor is a legal, valid and binding obligation of the New Guarantor, enforceable against the New Guarantor in accordance with its terms.

6. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This First Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

7. Governing Law. **THIS FIRST SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

8. Counterparts. The parties may sign any number of copies of this First Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

9. Effect of Headings. The Section headings herein are for convenience only and shall not affect the construction thereof.

10. Trustee. The Trustee makes no representations as to the validity or sufficiency of this First Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, Level 3 Parent, the Existing Guarantors and the New Guarantor, and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this First Supplemental Indenture to be duly executed as of the date first above written.

LEVEL 3 COMMUNICATIONS
LLC,

By

/s/ Stacey W. Goff

Name: Stacey W. Goff

Title: Executive Vice President
and General Counsel

LEVEL 3 PARENT, LLC,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President
and Treasurer

LEVEL 3 FINANCING, INC., on
behalf of itself as the Issuer and the Existing
Guarantors, if any,

By

/s/ Rafael Martinez-
Chapman

Name: Rafael Martinez-

Chapman

Title: Senior Vice President
and Treasurer

THE BANK OF NEW YORK
MELLON TRUST COMPANY, N.A., as
Trustee,

By

/s/ Julie Hoffman-Ramos

Name: Julie Hoffman-Ramos

Title: Vice President

SECOND SUPPLEMENTAL INDENTURE (this “Supplemental Indenture”) dated as of December 21, 2020 among LEVEL 3 FINANCING, INC., a Delaware corporation (the “Issuer”), LEVEL 3 PARENT, LLC, a Delaware limited liability company (“Level 3 Parent”), LEVEL 3 COMMUNICATIONS, LLC, a limited liability company (“Level 3 LLC”), and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., a national banking association, as trustee under the Indenture referred to below (the “Trustee”).

W I T N E S S E T H :

WHEREAS the Issuer, Level 3 Parent and the Trustee have heretofore executed and delivered (a) an Indenture dated as of August 12, 2020 (as amended, supplemented or otherwise modified from time to time, the “Indenture”; capitalized terms used but not defined herein have the meanings assigned thereto in the Indenture), providing for the issuance by the Issuer of its 3.625% Senior Notes due 2029 (the “Securities”), and (b) a First Supplemental Indenture dated December 21, 2020 pursuant to which Level 3 LLC has guaranteed the Issuer’s obligations under the Indenture (the “Subordinated Guarantee”);

WHEREAS the Issuer, Level 3 Parent, certain lenders (together with their successors and assigns and any future Lenders under and as defined in the Credit Agreement (as hereafter defined) (the “Lenders”) and Merrill Lynch Capital Corporation, as administrative agent and collateral agent (the “Administrative Agent”), have entered into a Credit Agreement dated as of March 13, 2007 (as amended and restated as of November 29, 2019, and as may be further amended or modified from time to time, the “Credit Agreement”), under which the Issuer has borrowed term loans in an aggregate principal amount of \$3,610,500,000 from the Lenders (the “Term Loans”);

WHEREAS the obligations of the Issuer under the Credit Agreement and the other Loan Documents (as defined therein) have been guaranteed by Level 3 LLC (subject to certain regulatory limitations that may be in effect from time to time);

WHEREAS the proceeds of the Term Loans have been advanced to Level 3 LLC under an intercompany demand note dated March 13, 2007, as amended and restated on November 29, 2019, in an initial principal amount of \$1,400,000,000 and subsequently increased to \$4,610,500,000, issued by Level 3 LLC to the Issuer (together with any additional loan proceeds note issued pursuant to Section 9.02 of the Credit Agreement, and as such note or any such additional note may be further amended or modified from time to time, the “Loan Proceeds Note”);

WHEREAS the Loan Proceeds Note has been pledged by the Issuer to the Collateral Agent (as defined in the Credit Agreement) in order to assure the Lenders against loss in respect of the obligations of the Issuer under the Credit Agreement;

WHEREAS pursuant to Section 1208 of the Indenture, the Trustee is authorized to enter into a supplemental indenture which subordinates in any bankruptcy, liquidation or winding up proceeding a guarantee of an Issuer Restricted Subsidiary as guarantor or borrower pursuant to the Indenture to the obligations of such Subsidiary under a Qualified Credit Facility;

WHEREAS upon the guarantee of the Securities by an Issuer Restricted Subsidiary (other than Level 3 LLC), the Issuer, Level 3 Parent, the Trustee and such Issuer Restricted Subsidiary shall enter into a supplemental indenture in substantially the form of this Second Supplemental Indenture pursuant to which such guarantee will be subordinated in any bankruptcy, liquidation or winding up proceeding to the obligations of such Issuer Restricted Subsidiary under the Loan Documents (as defined in the Credit Agreement);

WHEREAS the Credit Agreement constitutes a Qualified Credit Facility and the guarantee of the obligations under the Credit Agreement by Level 3 LLC and the issuance and pledge of the Loan Proceeds Note constitute Guarantees of a Qualified Credit Facility; and

WHEREAS pursuant to Section 801 and Section 1207 of the Indenture, the Trustee, Level 3 Parent, the Issuer and Level 3 LLC are authorized to execute and deliver this Second Supplemental Indenture;

NOW THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt of which is hereby acknowledged, Level 3 Parent, the Issuer, Level 3 LLC and the Trustee mutually covenant and agree for the equal and ratable benefit of the holders of the Securities as follows:

ARTICLE I

Subordination

SECTION 1.1. Subordination. The Trustee hereby agrees that all obligations in respect of any amounts payable by Level 3 LLC pursuant to the Subordinated Guarantee, including the guarantee of the payment of principal, premium (if any), interest or all other amounts payable in respect of the Securities (the “Subordinated Obligations”), shall be subordinate and junior in right of payment, to the extent and in the manner provided in the Indenture (as supplemented by this Second Supplemental Indenture), to the prior payment in full in cash of all obligations (including without limitation the Obligations (as defined in the Credit Agreement)) of Level 3 LLC under or in respect of the Loan Documents (as defined in the Credit Agreement) as in effect from time to time and the Loan Proceeds Note, including the payment of principal, premium (if any), interest (including interest arising after the commencement of a bankruptcy or other proceeding, whether or not such a claim is permitted in such proceeding), the guarantees thereof or all other amounts payable thereunder (the “Senior Obligations”).

SECTION 1.2. Subordination in the Event of Dissolution or Insolvency of Level 3 LLC. Upon any distribution of assets of Level 3 LLC in connection with its dissolution or insolvency or upon any dissolution, winding up, liquidation or reorganization of Level 3 LLC, whether in bankruptcy, insolvency, reorganization, arrangement or receivership or similar

proceedings, or upon any assignment for the benefit of creditors or any other marshaling of the assets and liabilities of Level 3 LLC:

(a) the holders of the Senior Obligations (the “Senior Creditors”) shall first be entitled to receive payment in full in cash of the Senior Obligations in accordance with the terms of such Senior Obligations before the Securityholders shall be entitled to receive any payment on account of the Subordinated Obligations owed by Level 3 LLC in respect of the Securities, whether of principal, premium (if any), interest, pursuant to the Subordinated Guarantee or otherwise; and

(b) any payment by, or distribution of the assets of, Level 3 LLC of any kind or character, whether in cash, property or securities, to which the Securityholders would be entitled except for the provisions of Section 1208 of the Indenture and this Second Supplemental Indenture shall be paid or delivered by the Person making such payment or distribution (whether a trustee in bankruptcy, a receiver, custodian or liquidating trustee or otherwise) directly to the Administrative Agent or the Senior Creditors to the extent necessary to make payment in full in cash of all Senior Obligations remaining unpaid, after giving effect to any concurrent payment or distribution to the Administrative Agent or the Senior Creditors in respect of the Senior Obligations.

SECTION 1.3. Certain Payments Held in Trust. In the event that any payment by, or distribution of the assets of, Level 3 LLC of any kind or character, whether in cash, property or securities, and whether directly or otherwise, shall be received by or on behalf of the Trustee or the Securityholders at a time when such payment is prohibited by or contrary to the agreements set forth in this Second Supplemental Indenture, such payment or distribution shall be held in trust for the benefit of, and shall be paid over to, the Administrative Agent or the Senior Creditors to the extent necessary to make payment in full in cash of all Senior Obligations remaining unpaid, after giving effect to any concurrent payment or distribution to the Administrative Agent or the Senior Creditors in respect of such Senior Obligations.

SECTION 1.4 Trustee Not Fiduciary. The Trustee shall not be deemed to owe any fiduciary duty to the Senior Creditors and shall not be liable to any such Senior Creditor if the Trustee shall in good faith mistakenly pay over or distribute to the Securityholders or to the Issuer or to any other person cash, property or securities to which any holders of Senior Obligations shall be entitled by virtue of this Article or otherwise. With respect to the holders of Senior Obligations, the Trustee undertakes to perform or to observe only such of its covenants or obligations as are specifically set forth in this Article and no implied covenants or obligations with respect to holders of Senior Obligations shall be read into this Second Supplemental Indenture against the Trustee.

SECTION 1.5. Legend. Any and all instruments or records now or hereafter creating or evidencing the Subordinated Obligations, whether upon refunding, extension, renewal, refinancing, replacement or otherwise, shall contain the following legend:

“Notwithstanding anything contained herein to the contrary, neither the principal of nor the interest on, nor any other amounts payable in respect of, the

indebtedness created or evidenced by this instrument or record shall be paid or payable with or by the funds provided by Level 3 Communications, LLC, except to the extent permitted under the First Supplemental Indenture dated December [●], 2020, among Level 3 Parent, LLC, Level 3 Communications, LLC, Level 3 Financing, Inc. and the Trustee, which First Supplemental Indenture is incorporated herein with the same effect as if fully set forth herein.”

SECTION 1.6. Obligations Hereunder Not Affected. So long as the Credit Agreement shall constitute a Qualified Credit Facility, this Second Supplemental Indenture shall continue to be effective or be reinstated, as the case may be, if at any time any payment of the Senior Obligations or any part thereof shall be rescinded or must otherwise be returned by the Administrative Agent and the Senior Creditors upon the insolvency, bankruptcy or reorganization of Level 3 LLC or otherwise, all as though such payment had not been made.

SECTION 1.7. Rights of Trustee Not Subordinated. Notwithstanding anything to the contrary contained herein, in no event shall anything contained herein apply to claims of or payments to the Trustee under or pursuant to Section 607 of the Indenture; it being understood that no such claims shall be subject to the subordination set forth in this Second Supplemental Indenture.

ARTICLE II

Miscellaneous

SECTION 2.1. Governing Law. **THIS SECOND SUPPLEMENTAL INDENTURE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK BUT WITHOUT GIVING EFFECT TO APPLICABLE PRINCIPLES OF CONFLICTS OF LAW TO THE EXTENT THAT THE APPLICATION OF THE LAWS OF ANOTHER JURISDICTION WOULD BE REQUIRED THEREBY.**

SECTION 2.2. Modification. No modification, amendment or waiver of any provision of this Second Supplemental Indenture shall in any event be effective unless the same shall be in writing and signed by the Trustee, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given.

SECTION 2.3. Opinion of Counsel. Concurrently with the execution and delivery of this Second Supplemental Indenture, the Issuer shall deliver to the Trustee an Opinion of Counsel to the effect that this Second Supplemental Indenture has been duly authorized, executed and delivered by each of Level 3 Parent, the Issuer and Level 3 LLC and that, subject to the application of bankruptcy, insolvency, moratorium, fraudulent conveyance or transfer and other similar laws relating to creditors' rights generally and to the principles of equity, whether considered in a proceeding at law or in equity, this Second Supplemental Indenture is a legal, valid and binding obligation of Level 3 Parent, the Issuer and Level 3 LLC, enforceable against each of them in accordance with its terms.

SECTION 2.4. Ratification of Indenture; Supplemental Indentures Part of Indenture. Except as expressly amended hereby, the Indenture is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. This Second Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder of Securities heretofore or hereafter authenticated and delivered shall be bound hereby.

SECTION 2.5. Counterparts. The parties may sign any number of copies of this Second Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

SECTION 2.6. Headings. Article and Section headings used herein are for convenience of reference only, are not part of this Second Supplemental Indenture and are not to affect the construction of, or to be taken into consideration in interpreting, this Second Supplemental Indenture.

SECTION 2.7. Trustee. The Trustee makes no representation as to the validity or sufficiency of this Second Supplemental Indenture. The recitals and statements herein are deemed to be those of the Issuer, the Level 3 Parent, Level 3 LLC and not of the Trustee.

[Remainder of this page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Second Supplemental Indenture to be duly executed as of the date first above written.

LEVEL 3 PARENT, LLC,

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-Chapman

Title: Senior Vice President and
Treasurer

LEVEL 3 FINANCING, INC.,

By

/s/ Rafael Martinez-Chapman

Name: Rafael Martinez-Chapman

Title: Senior Vice President and
Treasurer

LEVEL 3 COMMUNICATIONS, LLC,

By

/s/ Stacey W. Goff

Name: Stacey W. Goff

Title: Executive Vice President
and General Counsel

THE BANK OF NEW YORK MELLON
TRUST COMPANY, N.A., as Trustee,

By

/s/ Julie Hoffman-Ramos

Name: Julie Hoffman-Ramos

Title: Vice President

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

December 31, 2020

Lumen Technologies, Inc. ("Lumen", the "Company", "we" or "us") has two classes of securities registered under Section 12 of the Securities Exchange Act of 1934 (as amended, the "Exchange Act"): (i) Common Stock, par value \$1.00 per share ("Common Stock"), and (ii) Series CC Junior Participating Preferred Stock Purchase Rights ("Purchase Rights"). Each of the Company's securities registered under Section 12 of the Exchange Act are listed on The New York Stock Exchange.

DESCRIPTION OF COMMON STOCK

The following is a summary description of the rights of the holders of the Common Stock and related provisions of the Company's Articles of Incorporation, as amended and restated (the "Articles"), and bylaws, as amended and restated (the "Bylaws"), and applicable Louisiana law. This summary is intended to provide a general description only, does not purport to be complete and is qualified in its entirety by reference to, and should be read in conjunction with, the Articles, Bylaws and applicable Louisiana law.

General

Lumen is currently authorized under its Articles to issue an aggregate 2.202 billion shares of capital stock, consisting of 2.200 billion shares of Common Stock, \$1.00 par value per share, and 2 million shares of preferred stock, \$25.00 par value per share. All of the outstanding capital stock of the Company is fully paid and non-assessable.

Dividends

Holders of our Common Stock are entitled to receive dividends when, as and if declared by our board of directors, out of funds legally available therefor, subject to the preferences applicable to any outstanding preferred stock.

No Preemptive, Redemption or Conversion Rights

The Common Stock is not redeemable, is not subject to sinking fund provisions, does not have any conversion rights and is not subject to call. Holders of shares of Common Stock have no preemptive rights to maintain their percentage of ownership in future offerings or sales of stock of Lumen.

Voting Rights

Under the Articles, each share of Common Stock entitles the holder thereof to one vote per share in all elections of directors and on all other matters duly submitted to shareholders for their vote or consent. Holders of our Common Stock do not have cumulative voting rights.

Liquidation, Dissolution or Similar Rights

In the event we liquidate, dissolve or wind up our affairs, holders of our Common Stock would be entitled to receive ratably all of our assets remaining after satisfying the preferences of our creditors and the holders of any outstanding preferred stock.

Certain Provisions Affecting Takeovers

Provisions of the Articles and Bylaws may delay or discourage transactions involving an actual or potential change of control in the Company or its management, including transactions in which shareholders might otherwise receive a premium for their shares, or transactions that the Company's shareholders might otherwise deem to be in their best interests. Among other things:

- Our Articles provide that shareholder action may only be taken at an annual or special meeting of shareholders and may not be taken by written consent of the shareholders.
- Under our Articles, the shareholders may remove any director or the entire board of directors, only for cause, at any meeting of the shareholders called for such purpose, by the affirmative vote of (i) a majority of the total voting power of all shareholders and (ii) at any time there is a related person (as defined in the Articles), a majority of the total voting power of all shareholders other than the related person, voting as a separate group.
- Pursuant to our Articles, vacancies on our board may be filled only by the board of directors by a vote of both a majority of the directors then in office and a majority of the continuing directors (as defined in the Articles) voting as a separate group.
- Under our Articles, the number of authorized directors may not be increased or decreased without, among other things, the approval of both 80% of the directors then in office and a majority of the continuing directors voting as a separate group.
- Our Articles contain "fair price" provisions designed to provide supermajority vote and other safeguards for our shareholders when related persons attempt to effect a business combination with us, unless the business combination is approved in advance by the directors or satisfies various minimum price, consideration and procedural requirements, in each case as set forth in the Articles.
- Our board of directors is required by our Articles to consider particular factors enumerated therein when evaluating a business combination, tender or exchange offer or a proposal by another person to make a tender or exchange offer.
- Our Bylaws establish an advance notice procedure with regard to the nomination, other than by or at the direction of our board of directors, of candidates for election as directors and with regard to other matters to be brought before a meeting of our shareholders.
- Various provisions of our Articles may not be amended except upon the affirmative vote of both 80% of the total voting power of all shareholders and two-thirds of the total voting power of shareholders, other than a related person, present or represented at a shareholders' meeting, voting as a separate group.

- Our Bylaws may be adopted, amended or repealed and new bylaws may be adopted by either a majority of our directors and a majority of our continuing directors, voting as a separate group; or the holders of at least 80% of the total voting power of all shareholders and two-thirds of the total voting power of shareholders, other than a related person, present or duly represented at a shareholders' meeting, voting as a separate group.
- Our board of directors is authorized, without action of the shareholders, to issue (i) additional shares of Common Stock, subject to certain limitations under the New York Stock Exchange listing standards and the Louisiana Business Corporation Act, and (ii) additional shares of preferred stock with rights and preferences designated by the board of directors, which could include terms adversely affecting the rights of holders of the Common Stock.

In addition, certain federal foreign ownership limitations and provisions in our debt instruments could potentially discourage certain change of control transactions.

Additional Information

As of December 31, 2020, Lumen had outstanding 7,018 shares of 5% Cumulative Convertible Series L Preferred Stock that entitles the holders to certain preferential liquidation and other rights and to cast one vote per share, together with holders of the Common Stock, on all matters duly submitted to a vote of shareholders. For additional information on the matters summarized above, see our Registration Statement on Form 8-A/A filed with the U.S. Securities and Exchange Commission (the "SEC") on March 2, 2015. Our Articles and Bylaws are filed as exhibits to our accompanying Annual Report on Form 10-K.

DESCRIPTION OF SERIES CC JUNIOR PARTICIPATING PREFERRED STOCK PURCHASE RIGHTS

General

On February 13, 2019, we entered into a Section 382 Rights Agreement by and between the Company and Computershare, Inc., as rights agent (the "Rights Agent"). On May 9, 2019, the Company and the Rights Agent amended and restated the Section 382 Rights Agreement (as so amended and restated, the "NOL Rights Plan"). On November 20, 2020, the Company and the Rights Agent entered into that certain First Amendment effective as of December 1, 2020 (the "First Amendment") to the Company's NOL Rights Plan.

We adopted the NOL Rights Plan to diminish the risk that we could experience an "ownership change" as defined under Section 382 of the Internal Revenue Code of 1986 (as amended, the "Code"), which could substantially limit our ability to use our net operating loss carryover (collectively, the "NOLs") to reduce anticipated future tax liabilities. The First Amendment, among other things, extended the NOL Rights Plan's expiration date through December 1, 2023 to protect the Company's NOLs.

Pursuant to the NOL Rights Plan, the Company's board of directors declared a dividend of one preferred share purchase right (each, a "Right") for each outstanding share of Common Stock. The dividend was distributed to shareholders of record as of the close of business on February 25, 2019.

On May 22, 2019, Lumen's shareholders ratified the NOL Rights Plan, and the Company intends to seek shareholder ratification of the First Amendment at its 2021 annual meeting of shareholders. If shareholder approval of the First Amendment is not obtained by December 1, 2021, the NOL Rights Plan, as amended by the First Amendment, will terminate on such date.

The following is a summary description of the Rights and the other material terms and conditions of the NOL Rights Plan, as amended by the First Amendment. This summary is intended to provide a general description only, does not purport to be complete and is qualified in its entirety by reference to, and should be read in conjunction with, the complete text of the NOL Rights Plan and the First Amendment. All capitalized terms used herein but not defined herein shall have the meanings ascribed to such terms in the NOL Rights Plan, as amended by the First Amendment.

Applicability of NOL Rights Plan

Under the NOL Rights Plan, since February 25, 2019, each share of our Common Stock has carried with it one Right until the Distribution Date (as defined below) or the earlier expiration of the Rights, as described below. Shareholders who owned 4.9% or more of the outstanding Common Stock as of the close of business on February 13, 2019, will not trigger the Rights so long as they do not (i) acquire additional shares of Common Stock representing one-half of one percent (0.5%) or more of the shares of Common Stock outstanding at the time of such acquisition or (ii) fall under 4.9% ownership of Common Stock and then re-acquire shares that in the aggregate equal 4.9% or more of the Common Stock. A person will not trigger the Rights solely as a result of any transaction that the board of directors determines, in its sole discretion, is an exempt transaction for purposes of triggering the Rights. To the Company's knowledge, STT Crossing Ltd. was the only holder of 5.0% or more of the Company's outstanding shares of Common Stock on February 13, 2019, for purposes of Section 382 of the Code. The NOL Rights Plan permits STT Crossing Ltd. and its affiliates to acquire additional shares of Common Stock subject to certain conditions and restrictions, and to transfer such shares among themselves.

The Company's board of directors may, in its sole discretion prior to the Distribution Date, exempt any person or group for purposes of the NOL Rights Plan if it determines the acquisition by such person or group will not jeopardize tax benefits or is otherwise in the Company's best interests. Any person that acquires shares of Common Stock in violation of these limitations is known as an "Acquiring Person." Notwithstanding the foregoing, a Person shall not be an "Acquiring Person" if the Independent Directors (as defined in the NOL Rights Plan) determines at any time that a Person who would otherwise be an "Acquiring Person" has become such without intending to become an "Acquiring Person," and such Person divests as promptly as practicable (or within such period of time as the Independent Directors determine is reasonable) a sufficient number of shares of Common Stock of the Company so that such Person would no longer be an "Acquiring Person," as defined pursuant to the NOL Rights Plan.

The Rights

From the record date of February 25, 2019 until the Distribution Date or earlier expiration of the Rights, the Rights will trade with, and be inseparable from, the Common Stock. New Rights will also accompany any new shares of Common Stock that are issued after February 13, 2019, until the Distribution Date or earlier expiration of the Rights.

Exercise Price

Each Right will allow its holder to purchase from the Company one ten-thousandth of a share of Series CC Junior Participating Preferred Stock ("Preferred Share") for \$28, subject to adjustment (the "Exercise Price"), once the Rights become exercisable. This fraction of a Preferred Share will give the shareholder approximately the same dividend, voting and liquidation rights as would one share of Common Stock. Prior to exercise, each Right does not give its holder any dividend, voting or liquidation rights.

Exercisability

The Rights will not be exercisable until 10 business days (as may be extended in the discretion of the Independent Directors) after the public announcement that a person or group has become an Acquiring Person unless the NOL rights Plan is theretofore terminated or the Rights are theretofore redeemed (as described below).

We refer to the date when the Rights become exercisable as the "Distribution Date." Until that date or earlier expiration of the Rights, the Common Stock certificates will also evidence the Rights, and any transfer of shares of Common Stock will constitute a transfer of Rights. After that date, the Rights will separate from the Common Stock and be evidenced by book-entry credits or by Rights certificates that we will mail to all eligible holders of Common Stock. Any Rights held by an Acquiring Person, or any Affiliates or Associates of the Acquiring Person, are void and may not be exercised.

Consequences of a Person or Group Becoming an Acquiring Person

If a person or group becomes an Acquiring Person, all holders of Rights except the Acquiring Person, or any Affiliates or Associates of the Acquiring Person, may, upon payment of the Exercise Price, purchase shares of our Common Stock with a market value of twice the Exercise Price, based on the "current per share market price" of the Common Stock (as defined in the NOL Rights Plan) on the date of the acquisition that resulted in such person or group becoming an Acquiring Person.

Exchange

After a person or group becomes an Acquiring Person, our Independent Directors in their sole discretion may extinguish the Rights by exchanging one share of Common Stock or an equivalent security for each Right, other than Rights held by the Acquiring Person or any Affiliates or Associates of the Acquiring Person.

Preferred Share Provisions

Each one ten-thousandth of a Preferred Share, if issued:

- will not be redeemable;
- will entitle holders to dividends equal to the dividends, if any, paid on one share of Common Stock;
- will entitle holders upon liquidation either to receive \$1.00 per share or an amount equal to the payment made on one share of Common Stock, whichever is greater;
- will vote together with the Common Stock as one class on all matters submitted to a vote of shareholders of the Company and will have the same voting power as one share of Common Stock, except as otherwise provided by law; and
- will entitle holders to a per share payment equal to the payment made on one share of Common Stock, if shares of our Common Stock are exchanged via merger, consolidation, or a similar transaction.

The value of one ten-thousandth interest in a Preferred Share is expected to approximate the value of one share of Common Stock.

Expiration

After giving effect to the First Amendment, the Rights will expire on the earliest of (i) December 1, 2023, (ii) the time at which the Rights are redeemed, (iii) the time at which the Rights are exchanged, (iv) December 1, 2021, if approval of the First Amendment by the affirmative vote of a majority of the votes cast at a duly called meeting of shareholders has not been obtained prior to such date, or (v) the time at which the Company's board of directors makes certain specified determinations that the NOLs are no longer necessary or in the best interests of the Company and its shareholders.

Redemption

Our board of directors may redeem the Rights for \$0.0001 per Right at any time before the Distribution Date. If our board of directors redeems any Rights, it must redeem all of the Rights. Once the Rights are redeemed, the only right of the holders of Rights will be to receive the redemption price of \$0.0001 per Right. The redemption price will be adjusted if we have a stock split or stock dividends of our Common Stock.

Anti-Dilution Provisions

Our board of directors may adjust the Exercise Price, the number of Preferred Shares issuable per Right and the number of outstanding Rights to prevent dilution that may occur from a stock dividend, a stock split or a reclassification of the Preferred Shares or Common Stock.

Amendments

The terms of the NOL Rights Plan may be amended by our board of directors without the consent of the holders of the Rights, including to effect additional extensions of the expiration date of the Rights in the future. After any Distribution Date, our board of directors may not amend the agreement in a way that adversely affects holders of the Rights (other than an Acquiring Person, or an Affiliate or Associate of an Acquiring Person).

Additional Information

For additional information on the NOL Rights Plan, see our Registration Statement on Form 8-A filed with the SEC on March 11, 2019, as amended by the Form 8-A/A filed with the SEC on November 27, 2020. The NOL Rights Plan and the First Amendment are filed as exhibits to our accompanying Annual Report on Form 10-K.

LUMEN TECHNOLOGIES, INC.
SUBSIDIARIES OF THE REGISTRANT
AS OF December 31, 2020

Subsidiary	State of incorporation or formation
Actel, LLC	Delaware
Century Cellunet International, Inc.	Louisiana
Cellunet of India Limited	Mauritius
Century Telephone of West Virginia, Inc.	West Virginia
CenturyLink – Clarke M. Williams Foundation	Colorado
CenturyLink Communications, LLC	Delaware
Lumen Technologies, LLC	Minnesota
Boxgate Holdings, LLC	Delaware
Cognilytics Software and Consulting Private Limited	India
ELASTICBOX INC., SUCURSAL EN ESPAÑA	Spain
Q Fiber, LLC	Delaware
Qwest International Services Corporation	Delaware
CenturyLink Comunicações Ltda.	Brazil
Qwest Transoceanic, Inc.	Delaware
Qwest Communications International Ltd.	United Kingdom
CenturyLink Limited	United Kingdom
CenturyLink Austria GmbH	Austria
Qwest Holdings, BV	Netherlands
CenturyLink Belgium Sprl	Belgium
Qwest Germany GmbH	Germany
Qwest Netherlands BV	Netherlands
Qwest Peru S.R.L.	Peru
Qwest Telecommunications Asia, Limited	Hong Kong
CenturyLink Technology Australia Pty Ltd	Australia
CenturyLink Corporation Japan	Japan
Qwest Communications Korea, Limited	Korea
Qwest Hong Kong Telecommunications, Limited	Hong Kong
CenturyLink Technology Singapore Pte. Ltd.	Singapore
Qwest Taiwan Telecommunications, Limited	Taiwan
SEAL Consulting, Inc.	New Jersey
CenturyLink Europe B.V.	Netherlands
CenturyLink Europe B.V./, M., The Netherlands, filial Sweden	Sweden
CenturyLink Europe B.V., Sucursal en España	Spain
CenturyLink Philippines, Inc.	Philippines
CenturyLink Switzerland A.G.	Switzerland
CenturyLink Taiwan Limited	Taiwan
CenturyLink Technology Hong Kong Limited	Hong Kong
CenturyLink – Colocation Entity Limited	Hong Kong
CenturyLink IT Consulting (Shanghai) Co., Ltd.	China
Digital Savvis HK JV Limited	British VI

Subsidiary	State of incorporation or formation
Digital Savvis HK Holding 1 Limited	British VI
Digital Savvis Investment Management HK Limited	Hong Kong
Digital Savvis Management Subsidiary Limited	Hong Kong
CenturyLink Technology Malaysia Sdn. Bhd.	Malaysia
CenturyLink (Thailand) Limited	Thailand
CenturyLink Canada, Inc.	Canada
SAVVIS Argentina S.A.	Argentina
SAVVIS Communications Chile, S.A.	Chile
SAVVIS Federal Systems, Inc.	Delaware
SAVVIS Communications International, Inc.	Delaware
CenturyLink Korea Limited	Korea
SAVVIS Communications Private Limited	India
SAVVIS Mexico, S.A. de C.V.	Mexico
CenturyLink of Louisiana, LLC	Louisiana
CenturyTel of Adamsville, Inc.	Tennessee
CenturyTel of Arkansas, Inc.	Arkansas
CenturyTel Broadband Services, LLC	Louisiana
CenturyTel TeleVideo, Inc.	Wisconsin
CenturyTel/Teleview of Wisconsin, Inc.	Wisconsin
Qwest Broadband Services, Inc.	Delaware
CenturyTel Broadband Wireless, LLC	Louisiana
CenturyTel of Central Indiana, Inc.	Indiana
CenturyTel of Chester, Inc.	Iowa
CenturyTel of Claiborne, Inc.	Tennessee
CenturyTel Holdings, Inc.	Louisiana
Century Marketing Solutions, LLC	Louisiana
CenturyTel Arkansas Holdings, Inc.	Arkansas
CenturyTel of Central Arkansas, LLC	Louisiana
CenturyTel of Northwest Arkansas, LLC	Louisiana
CenturyTel Holdings Alabama, Inc.	Alabama
CenturyTel of Alabama, LLC	Louisiana
CenturyTel Holdings Missouri, Inc.	Missouri
CenturyTel of Missouri, LLC	Louisiana
CenturyTel Investments of Texas, Inc.	Delaware
CenturyTel of the Northwest, Inc.	Washington
Brown Equipment Corp.	Nevada
Carter Company, Inc.	Hawaii
Cascade Autovon Company	Washington
CenturyTel/Cable Layers, Inc.	Wisconsin
CenturyTel of Central Wisconsin, LLC	Delaware
CenturyTel of Colorado, Inc.	Colorado
CenturyTel of Eagle, Inc.	Colorado
CenturyTel of Eastern Oregon, Inc.	Oregon
CenturyTel Entertainment, Inc.	Washington

Subsidiary	State of incorporation or formation
CenturyTel of Fairwater-Brandon-Alto, LLC	Delaware
CenturyTel of Forestville, LLC	Delaware
CenturyTel of the Gem State, Inc.	Idaho
CenturyTel of Inter Island, Inc.	Washington
CenturyTel of Larsen-Readfield, LLC	Delaware
CenturyTel of the Midwest-Kendall, LLC	Delaware
CenturyTel of the Midwest-Wisconsin, LLC	Delaware
CenturyTel of Minnesota, Inc.	Minnesota
CenturyTel of Monroe County, LLC	Delaware
CenturyTel of Montana, Inc.	Oregon
CenturyTel of Northern Wisconsin, LLC	Delaware
CenturyTel of Northwest Wisconsin, LLC	Delaware
CenturyTel of Oregon, Inc.	Oregon
CenturyTel of Paradise, Inc.	Washington
CenturyTel of Cowiche, Inc.	Washington
CenturyTel of Postville, Inc.	Iowa
CenturyTel of Southern Wisconsin, LLC	Delaware
CenturyTel of the Southwest, Inc.	New Mexico
CenturyTel Telecom Service, Inc.	Washington
CenturyTel Telephone Utilities, Inc.	Washington
CenturyTel of Upper Michigan, Inc.	Michigan
CenturyTel of Washington, Inc.	Washington
CenturyTel/WORLDDVOX, Inc.	Oregon
CenturyTel of Wyoming, Inc.	Wyoming
Eagle Valley Communications Corporation	Colorado
International Communications Holdings, Inc.	Delaware
Pacific Telecom, Inc. (Shell)	Oregon
PTI Communications of Ketchikan, Inc.	Alaska
PTI Communications of Minnesota, Inc.	Minnesota
PTI Transponders, Inc.	Oregon
Universal Manufacturing Corp.	Wisconsin
CenturyTel of Idaho, Inc.	Delaware
CenturyTel Internet Holdings, Inc.	Louisiana
centurytel.com, LLC	Louisiana
CenturyTel Investments, LLC	Louisiana
CenturyTel of Michigan, Inc.	Michigan
CenturyTel Midwest - Michigan, Inc.	Michigan
CenturyTel Mobile Communications, Inc.	Louisiana
CenturyTel of Mountain Home, Inc.	Arkansas
CenturyTel of North Mississippi, Inc.	Mississippi
CenturyTel of Northern Michigan, Inc.	Michigan
CenturyTel of Odon, Inc.	Indiana
CenturyTel of Ohio, Inc.	Ohio
CenturyTel of Ooltewah-Collegedale, Inc.	Tennessee

Subsidiary	State of incorporation or formation
CenturyTel of Port Aransas, Inc.	Texas
CenturyTel of Redfield, Inc.	Arkansas
CenturyTel SM Telecorp, Inc.	Texas
CenturyTel Telecommunications, Inc.	Texas
CenturyTel of San Marcos, Inc.	Texas
CenturyTel San Marcos Investments, LLC	Delaware
CenturyTel Security Systems, Inc.	Louisiana
CenturyTel Service Group, LLC	Louisiana
CenturyTel of South Arkansas, Inc.	Arkansas
CenturyTel Supply Group, Inc.	Louisiana
CenturyTel/Tele-Max, Inc.	Texas
CenturyTel of Lake Dallas, Inc.	Texas
CenturyTel Web Solutions, LLC	Louisiana
CenturyTel of Wisconsin, LLC	Louisiana
Embarq Corporation	Delaware
Carolina Telephone and Telegraph Company LLC	North Carolina
NOCUTS, Inc.	Pennsylvania
SC One Company	Kansas
Centel Corporation	Kansas
Centel Capital Corporation	Delaware
Centel-Texas, Inc.	Texas
Central Telephone Company of Texas	Texas
EQ Central Texas Equipment LLC	Texas
Central Telephone Company	Delaware
Central Telephone Company of Virginia	Virginia
Embarq Florida, Inc.	Florida
The Winter Park Telephone Company	Florida
CenturyLink Intellectual Property LLC	Delaware
Embarq Directory Trademark Company, LLC	Delaware
CenturyLink Sales Solutions, Inc.	Delaware
Embarq, Inc.	Kansas
Embarq Capital Corporation	Delaware
SC Seven Company	Kansas
Embarq Interactive Holdings LLC	Delaware
Embarq Interactive Markets LLC	Delaware
Embarq Management Company	Delaware
Embarq Mid-Atlantic Management Services Company	North Carolina
Embarq Minnesota, Inc.	Minnesota
Embarq Missouri, Inc.	Missouri
SC Eight Company	Kansas
Embarq Network Company LLC	Delaware
EQ Equipment Leasing, Inc.	Delaware
Preferred Communications of Texas, LLC	Delaware
United Telephone Company of the Carolinas LLC	South Carolina

Subsidiary	State of incorporation or formation
SC Two Company	Kansas
United Telephone Company of Eastern Kansas	Delaware
United Telephone Company of Florida	Florida
United Telephone Company of Indiana, Inc.	Indiana
SC Four Company	Kansas
United Telephone Company of Kansas	Kansas
Embarq Midwest Management Services Company	Kansas
United Teleservices, Inc.	Kansas
United Telephone Company of New Jersey, Inc.	New Jersey
United Telephone Company of the Northwest	Oregon
United Telephone Company of Ohio	Ohio
SC Five Company	Kansas
United Telephone Company of Pennsylvania LLC, The	Pennsylvania
SC Six Company	Kansas
United Telephone Company of Southcentral Kansas	Arkansas
United Telephone Company of Texas, Inc.	Texas
EQ United Texas Equipment LLC	Texas
United Telephone Company of the West	Delaware
United Telephone Southeast LLC	Virginia
SC Three Company	Kansas
Lafayette MSA Limited Partnership	Delaware
Madison River Communications Corp.	Delaware
Gallatin River Holdings L.L.C.	Delaware
Gallatin River Communications L.L.C.	Delaware
Madison River Finance Corp.	Delaware
Madison River Holdings LLC	Delaware
Madison River LTD Funding LLC	Delaware
Coastal Utilities, Inc.	Georgia
Gulf Coast Services, LLC	Alabama
Gulf Telephone Company, LLC	Alabama
Madison River Management LLC	Delaware
Mehtel, Inc.	North Carolina
Qwest Communications International, Inc.	Delaware
EUnet International Limited	United Kingdom
Qwest Capital Funding, Inc.	Colorado
Qwest Europe LLC	Delaware
Qwest Services Corporation	Colorado
CenturyLink Investment Management Company	Colorado
Qwest Corporation	Colorado
1200 Landmark Center Condominium Association, Inc.	Nebraska
Qwest Database Services, Inc.	Colorado
Qwest India Holdings, LLC	Delaware
CenturyLink Technologies India Private Limited	India
Seal Infotech Private Limited	India

Subsidiary	State of incorporation or formation
The El Paso County Telephone Company	Colorado
Qwest Dex Holdings, Inc.	Delaware
Lumen Technologies Government Solutions, Inc.	Colorado
Qwest Wireless, L.L.C.	Delaware
Spectra Communications Group, LLC	Delaware
TelUSA Holdings, LLC	Delaware
Telephone USA of Wisconsin, LLC	Delaware
Western Re, Inc.	Louisiana
Wildcat Holdco LLC	Delaware
Level 3 Parent, LLC	Delaware
Legend Circle Holdings, Inc.	Delaware
Eldorado Acquisition Two, Inc.	Delaware
Level 3 EON, LLC	Delaware
Level 3 Financing, Inc.	Delaware
Streamroot, Inc.	Delaware
Streamroot SAS	France
Level 3 Holdings, Inc.	Delaware
Continental Holdings, Inc.	Wyoming
KMI Continental Lignite, Inc.	Delaware
Continental Level 3, Inc.	Delaware
Continental Mineral Sales, Inc.	Delaware
CCC Canada Holding, Inc.	Delaware
AmSoft Information Services Limited	Mauritius
Level 3 International Services, Inc.	Delaware
CenturyLink Communications Denmark Aps	Denmark
Level 3 Communications Austria GmbH	Austria
BTE Equipment, LLC	Delaware
Level 3 Communications Canada Co.	Nova Scotia
Level 3 Communications, LLC	Delaware
Global Crossing Americas Solutions, LLC	Delaware
Global Crossing Americas Solutions, Inc.	Puerto Rico Branch
CenturyLink Latin American Solutions, LLC	Delaware
Level 3 Communications of Virginia, Inc.	Virginia
XCOM Technologies of New York, Inc.	New York
IP Networks, Inc.	Delaware
TelCove Operations, LLC	Delaware
TelCove of Pennsylvania, LLC	Delaware
WiTel Communications (Cayman) Limited	Cayman Islands
WiTel International Telecom (Chile) Limited	Cayman Islands
Williams Comunicaciones Chile Limitada	Chile
WiTel Communications Network, Inc.	Canada
WiTel Communications, LLC	Delaware
WiTel Communications Pty Limited	Australia
Vyvx, LLC	Delaware

Subsidiary	State of incorporation or formation
FTV Communications, LLC	Delaware
Broadwing, LLC	Delaware
ACME Grating Ventures, L.L.C.	Delaware
Broadwing Communications, LLC	Delaware
Corvis Gratings Company	Nova Scotia, Canada
Corvis Canada, Inc.	Quebec, Canada
Global Crossing North American Holdings, Inc.	Delaware
Global Crossing North America, Inc.	New York
Global Crossing Telecommunications, Inc.	Michigan
Global Crossing Telemanagement VA, LLC	Virginia
Level 3 Enhanced Services, LLC	Delaware
Level 3 Telecom, LLC	Delaware
Level 3 Telecom Holdings, LLC	Delaware
Level 3 Telecom Data Services, LLC	Delaware
Level 3 Telecom of Arizona, LLC	Delaware
Level 3 Telecom of Colorado, LLC	Delaware
Level 3 Telecom of Idaho, LLC	Delaware
Level 3 Telecom of Illinois, LLC	Delaware
Level 3 Telecom of Iowa, LLC	Delaware
Level 3 Telecom of Minnesota, LLC	Delaware
Level 3 Telecom of New Mexico, LLC	Delaware
Level 3 Telecom of Ohio, LLC	Delaware
Level 3 Telecom of Oregon, LLC	Delaware
Level 3 Telecom of South Carolina, LLC	Delaware
Level 3 Telecom of Tennessee, LLC	Delaware
Level 3 Telecom of Texas, LLC	Delaware
Level 3 Telecom of Utah, LLC	Delaware
Level 3 Telecom of Washington, LLC	Delaware
Level 3 Telecom Management Co., LLC	Delaware
Xspedius Management Co. International, LLC	Delaware
Level 3 Telecom of Alabama, LLC	Delaware
Level 3 Telecom of Arkansas, LLC	Delaware
Level 3 Telecom of DC, LLC	Delaware
Level 3 Telecom of Kansas City, LLC	Delaware
Level 3 Telecom of Kentucky, LLC	Kentucky
Level 3 Telecom of Louisiana, LLC	Delaware
Level 3 Telecom of Maryland, LLC	Delaware
Level 3 Telecom of Mississippi, LLC	Delaware
Level 3 Telecom of Nevada, LLC	Delaware
Level 3 Telecom of Oklahoma, LLC	Delaware
Level 3 Telecom of Virginia, LLC	Virginia
Level 3 Telecom Holdings II, LLC	Delaware
Level 3 Telecom, LP	Delaware
Level 3 Telecom of California, LP	Delaware

Subsidiary	State of incorporation or formation
Level 3 Telecom of Florida, LP	Delaware
Level 3 Telecom of Georgia, LP	Delaware
Level 3 Telecom of Hawaii, LP	Delaware
Level 3 Telecom of Indiana, LP	Delaware
Level 3 Telecom of New Jersey, LP	Delaware
Level 3 Telecom of New York, LP	Delaware
Level 3 Telecom of North Carolina, LP	Delaware
Level 3 Telecom of Wisconsin, LP	Delaware
Level 3 GC Limited	Bermuda
CenturyLink Communications PEC Luxembourg I S.à r.l.	Luxembourg
CenturyLink Communications PEC Luxembourg II S.à r.l.	Luxembourg
CenturyLink Communications PEC Services Europe Limited	Ireland
CenturyLink Communications PEC Services Ireland Limited	Ireland
CenturyLink Communications PEC Ireland Limited	Ireland
Level 3 Communications Hong Kong Limited	Hong Kong
Level 3 Communications Singapore Pte. Ltd.	Singapore
Level 3 Communications Australia Pty Ltd	Australia
Global Crossing International Networks Ltd.	Bermuda
Level 3 Communications St. Croix, Inc.	US Virgin Islands
Century Link Costa Rica S.R.L.	Costa Rica
CenturyLink Panama	Panama
CenturyLink Holding Brasil Ltda.	Brazil
CenturyLink Brasil Comunicações e Serviços Ltda.	Brazil
CenturyLink Communications (IMPSAT) Nederland B.V.	Netherlands
CenturyLink Impsat Holdings I Limited	United Kingdom
CenturyLink Impsat Holdings II Limited	United Kingdom
CTL Mexico Servicios, S. De R. L. de C. V.	Mexico
CTL Mexico Landing, S. de R.L.	Mexico
CTL Mexico II, S. de R.L. de C.V.	Mexico
CenturyLinkEcuador S.A.	Ecuador
CenturyLink Telecomunicaciones S.A.	Venezuela
CenturyLink Peru S.A.	Peru
CenturyLink Chile S.A.	Chile
CenturyLink Colombia S.A.S.	Colombia
CenturyLink Participações e Comercial Ltda.	Brazil
CenturyLink Comunicações do Brasil Ltda.	Brazil
Impsat Fiber Networks, LLC	Delaware
CenturyLink Argentina S.A.	Argentina
CenturyLink Argentina S.A. Sucursal Uruguay	Uruguay Branch
Global Crossing International, Ltd.	Bermuda
Level 3 Asia, Inc.	Delaware
Level 3 Communications (Asia Pacific) Ltd.	Hong Kong
Level 3 International, Inc.	Delaware
Level 3 CDN International, Inc.	Delaware

Subsidiary	State of incorporation or formation
Lumen Technologies New Zealand Limited	New Zealand
CenturyLink EMEA Holdings Limited	United Kingdom
CenturyLink Communications Europe Limited	United Kingdom
Level Three Telecommunications Kenya	Kenya
CenturyLink Communications UK Limited	United Kingdom
Fibernet UK Limited	United Kingdom
CenturyLink Communications India Private Limited	India
Level 3 Holdings B.V.	Netherlands
CenturyLink Iceland ehf	Iceland
CenturyLink Communications Bulgaria EOOD	Bulgaria
CenturyLink Communications Poland SP. Z o.o.	Poland
CenturyLink Communications Croatia Usluge d.o.o.	Croatia
Level 3 Communications A.B.	Sweden
CenturyLink Communications Norge AS	Norway
CenturyLink Communications France s.à.r.l.*	France
CenturyLink Hungary Communications Kft.	Hungary
GC Pan European Crossing UK Ltd.	United Kingdom
CenturyLink Communications Italia Srl	Italy
CenturyLink Communications Switzerland AG	Switzerland
CenturyLink Communications España S.A.	Spain
CenturyLink Communications España S.A Sucursal em Portugal Portuguese Branch	Portugal
CenturyLink Communications Telekomünikasyon Hizmetleri Limited Şirketi	Turkey
CenturyLink Communications Germany GmbH	Germany
CenturyLink Communications NL B.V.	Netherlands
Level 3 Communications Japan KK	Japan
CenturyLink Communications NL BV	Greek Branch
Level 3 telekomunikacijski storitve d.o.o.	Slovenia
CenturyLink Communications Israel Ltd.	Israel
Level 3 Communications Limited	United Kingdom
CenturyLink Communications Finland Oy	Finland
CenturyLink Communications Belgium SA	Belgium
CenturyLink Communications RS d.o.o. Beograd-Stari Grad	Serbia
CenturyLink Communications Ireland Limited	Ireland
CenturyLink Communications CDN Ireland Limited	Ireland
CenturyLink Communications CZ s.r.o	Czech Republic
CenturyLink Communications Luxembourg S.à r.l.	Luxembourg
CenturyLink Communications Estonia OÜ	Estonia
ООО "CenturyLink Communications"	Russia
CenturyLink Communications South Africa (Pty) Limited	South Africa
Level 3 Communications spol. s.r.o.	Slovakia
Level 3 Europe B.V.	Netherlands
CenturyLink Communications Romania S.R.L.	Romania

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Lumen Technologies, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-227251) on Form S-3, the registration statements (Nos. 333-245036, 333-225154, 333-221267, 333-174571, and 333-150157) on Form S-8, and the registration statement (No. 333-215121) on Form S-4 of Lumen Technologies, Inc. of our reports dated February 25, 2021, with respect to the consolidated balance sheets of Lumen Technologies, Inc. as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, cash flows, and stockholders' equity for each of the years in the three-year period ended December 31, 2020, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2020, which reports appear in the December 31, 2020 annual report on Form 10-K of Lumen Technologies, Inc.

Our report on the consolidated financial statements refers to changes in the methods of accounting for the presentation of taxes assessed by a governmental authority as of January 1, 2020, and for leases as of January 1, 2019 due to the adoption of Accounting Standards Codification Topic 842, Leases.

/s/ KPMG LLP

Denver, Colorado
February 25, 2021

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Jeff K. Storey, Chief Executive Officer, certify that:

1. I have reviewed this Annual Report on Form 10-K of Lumen Technologies, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15 (e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors:
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2021

/s/ Jeff K. Storey

 Jeff K. Storey
 Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Indraneel Dev, Chief Financial Officer, certify that:

1. I have reviewed this Annual Report on Form 10-K of Lumen Technologies, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15 (e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's Board of Directors:
 - a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 25, 2021

/s/ Indraneel Dev

Indraneel Dev
Executive Vice President and Chief
Financial Officer

**Certification Pursuant to
18 U.S.C. Section 1350,
as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

I, Jeff K. Storey, Chief Executive Officer of Lumen Technologies, Inc. ("Lumen Technologies"), certify that, to my knowledge, the Annual Report on Form 10-K for the year ended December 31, 2020 of Lumen Technologies fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Lumen Technologies as of the dates and for the periods covered by such report.

A signed original of this statement has been provided to Lumen Technologies and will be retained by Lumen Technologies and furnished to the Securities and Exchange Commission or its staff upon request.

Date: February 25, 2021

/s/ Jeff K. Storey

Jeff K. Storey
Chief Executive Officer

**Certification Pursuant to
18 U.S.C. Section 1350,
as Adopted Pursuant to
Section 906 of the Sarbanes-Oxley Act of 2002**

I, Indraneel Dev, Chief Financial Officer of Lumen Technologies, Inc. ("Lumen Technologies"), certify that, to my knowledge, the Annual Report on Form 10-K for the year ended December 31, 2020 of Lumen Technologies fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Lumen Technologies as of the dates and for the periods covered by such report.

A signed original of this statement has been provided to Lumen Technologies and will be retained by Lumen Technologies and furnished to the Securities and Exchange Commission or its staff upon request.

Date: February 25, 2021

/s/ Indraneel Dev

Indraneel Dev
Executive Vice President and Chief
Financial Officer