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

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2020

☐ **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.: 000-09881

SHENTEL®

SHENANDOAH TELECOMMUNICATIONS COMPANY

(Exact name of registrant as specified in its charter)

Virginia	**54-1162807**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

500 Shentel Way, Edinburg, Virginia 22824
(Address of principal executive offices) (Zip Code)

(540) 984-4141 (Registrant's telephone number, including area code)

SECURITIES REGISTERED PURSUANT TO SECTION 12(B) OF THE ACT:

Common Stock (No Par Value)	SHEN	NASDAQ Global Select Market	49,932,073
(Title of Class)	(Trading Symbol)	(Name of Exchange on which Registered)	(The number of shares of the registrant's common stock outstanding on February 23, 2021)

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 Exchange Act. Yes ☐ No ☒

Note - Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Exchange Act from their obligations under those Sections.

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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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. Yes ☒ No ☐

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

The aggregate market value of the registrant’s voting stock held by non-affiliates of the registrant at June 30, 2020 based on the closing price of such stock on the Nasdaq Global Select Market on such date was approximately $2.4 billion.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s definitive proxy statement relating to its 2021 annual meeting of shareholders (the “2021 Proxy Statement”) are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. The 2021 Proxy Statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the end of the fiscal year to which this report relates.

SHENANDOAH TELECOMMUNICATIONS COMPANY

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PART I

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS:

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

- our ability to sustain and grow revenues and cash flow from operations by offering broadband internet, video, voice, cell tower space, fiber optic network services and other services to residential and commercial customers, to adequately meet the customer demands in our service areas and to maintain and grow our customer base, particularly in the face of increasingly aggressive competition, the need for innovation and the related capital expenditures;
- the impact of competition from other market participants, including but not limited to incumbent telephone companies, direct broadcast satellite ("DBS") operators, wireless broadband and telephone providers, digital subscriber line (“DSL”) providers, fiber to the home providers, video provided over the Internet by (i) market participants that have not historically competed in the multichannel video business, (ii) traditional multichannel video distributors, and (iii) content providers that have historically licensed cable networks to multichannel video distributors, and providers of advertising over the Internet;
- our ability to execute a definitive asset purchase agreement, secure required regulatory approvals, close the sale of our discontinued Wireless operations to T-Mobile and pay a special dividend to our shareholders;
- the availability of cash on hand and access to capital to fund the growth of capital expenditures needed to execute our business plan,
- natural disasters, pandemics and outbreaks of contagious diseases and other adverse public health developments, such as COVID-19;
- general business conditions, economic uncertainty or downturn, unemployment levels and the level of activity in the housing sector;
- our ability to obtain programming at reasonable prices or to raise prices to offset, in whole or in part, the effects of higher programming costs;
- our ability to develop and deploy new products and technologies including mobile products and any other consumer services and service platforms;
- any events that disrupt our networks, information systems or properties and impair our operating activities or our reputation;
- the ability to retain and hire key personnel;
- our ability to comply with all covenants in our credit facility, any violation of which, if not cured in a timely manner, could trigger an event of default.

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

Unless we indicate otherwise, references in this report to “we,” “us,” “our,” “Shentel” and “the Company” means Shenandoah Telecommunications Company and its subsidiaries.

ITEM 1. BUSINESS

Our Company

Shenandoah Telecommunications Company (“Shentel”, “we”, “our”, “us”, or the “Company”), is a provider of a broad range of diversified communications services through its high speed, state-of-the-art wireless, cable, fiber optic and fixed wireless networks to customers in the Mid-Atlantic United States. Shentel’s services include: broadband internet, video, and digital voice; fiber optic Ethernet, wavelength and leasing; telephone voice and digital subscriber line; tower colocation leasing; and wireless voice and data. For more information, please visit www.shentel.com.

Description of Business

Broadband Reporting Segment

Our Broadband segment provides broadband internet, video and voice services to residential and commercial customers in portions of Virginia, West Virginia, Maryland, Pennsylvania, and Kentucky, via hybrid fiber coaxial cable under the brand name of Shentel, fiber optic services under the brand name of Glo Fiber and fixed wireless network services under the brand name of Beam. The Broadband segment also leases dark fiber and provides Ethernet and Wavelength fiber optic services to enterprise and wholesale customers throughout the entirety of our service area. The Broadband segment also provides voice and DSL telephone services to customers in Virginia’s Shenandoah County and portions of adjacent counties as a Rural Local Exchange Carrier (“RLEC”). These integrated networks are connected by an approximately 6,800 fiber route mile network. This fiber optic network also supports our Wireless segment operations, which are currently classified as discontinued operations, and these intercompany transactions are reported at their estimated market value. The Broadband segment served 188,275 Revenue Generating Units ("RGUs") at December 31, 2020, representing an increase of 11.3%, from December 31, 2019.

Tower Reporting Segment

Our Tower segment owns 223 cell towers and leases colocation space on the towers to wireless communications providers, including our Wireless segment which is currently classified as a discontinued operation. Substantially all of our owned towers are built on ground that we lease from the respective landlords. The colocation space that we lease to our Wireless segment is priced at our estimate of fair market value.

Discontinued Wireless Operations

Our discontinued Wireless operations have been an affiliate of Sprint since 1999. Shentel is the exclusive personal communications service ("PCS") Affiliate of Sprint in a multi-state area covering large portions of central and western Virginia, south-central Pennsylvania, West Virginia, and portions of Maryland, and Kentucky.

On August 26, 2020, Sprint Corporation (“Sprint”), an indirect subsidiary of T-Mobile US, Inc., ("T-Mobile"), on behalf of and as the direct or indirect owner of Sprint PCS, delivered notice to the Company exercising its option to purchase the assets and operations of our Wireless operations ("Shentel Wireless"), for 90% of the “Entire Business Value” (as defined under our affiliate agreement and determined pursuant to the appraisal process set forth therein). Shortly thereafter, the Company committed to a plan to sell the discontinued Wireless operations.

The final and binding appraisal process was completed on February 1, 2021. Expected sale proceeds are $1.95 billion based upon the appraisal process and other agreements between the parties.

We expect to enter into a definitive asset purchase agreement with T-Mobile during the first quarter 2021 and expect that the transaction will close during the second quarter 2021, subject to customary closing conditions and required regulatory approvals.

The Company currently expects to use the after-tax proceeds from the sale of Shentel Wireless to, among other things:

- Repay approximately $702 million of outstanding term loans and swap liabilities, as required by our credit agreement and terminate those agreements;
- Issue a special dividend of $18.75 per share to Shentel's shareholders (the "Special Dividend");
- Provide adequate liquidity for growth and potential strategic acquisitions; and
- Provide liquidity for general corporate purposes.

Shentel expects to pay the Special Dividend in the second quarter 2021 after the close of the Shentel Wireless transaction, subject to the approval of Shentel’s Board of Directors.

Competition

Broadband competition
As the incumbent cable provider passing over 208,000 homes, we primarily compete directly against the incumbent local telephone companies such as CenturyLink, Inc., Frontier Communications Corp. and Verizon, who are generally provisioning broadband services over hybrid fiber and copper-based networks, and indirectly from wireless substitution as the bandwidth speeds from wireless providers have increased with network upgrades to 4^{th} and 5^{th} generation technology. Our Fiber to the Home (“Glo Fiber”) service passes over 28,000 homes and is competing against the incumbent local telephone company such as Verizon with hybrid fiber and copper-based networks and the incumbent cable company such as Comcast utilizing hybrid fiber coaxial networks. Our recently launched fixed wireless broadband service (“Beam”) passes over 9,400 homes and is competing against satellite providers, other fixed wireless providers, mobile wireless service providers and in certain cases the incumbent local telephone company with hybrid fiber and copper-based network.

Competition is also intense and growing in the market for video services. Incumbent cable television companies, which have historically provided video service, face competition from direct broadcast satellite providers such as Dish and DirecTV and on-line video services, such as Netflix, Hulu, Disney and Amazon. Our ability to compete effectively with our competitors in video will depend, in part, on price, content cost and variety and the convenience of our service offerings.

A continuing trend toward consolidation, mergers, acquisitions and strategic alliances in the telecommunications industry could also increase the level of competition we face by further strengthening our competitors.

Tower competition
We compete with other public tower companies, such as American Tower Co., Crown Castle International Corp., SBA Communications Corp., and private tower companies, private equity sponsored firms, carrier-affiliated tower companies, and owners of other alternative structures. We believe that site location and capacity, price, and leasing terms have been, and will continue to be, significant competitive factors affecting owners, operators and managers of communications sites.

Regulation

Our operations are subject to regulation by the Federal Communications Commission (“FCC”), the Virginia State Corporation Commission (“VSCC”), the West Virginia Public Service Commission, the Maryland Public Service Commission, the Pennsylvania Public Utility Commission, the Kentucky Public Service Commission and other federal, state, and local governmental agencies. The laws governing these agencies, and the regulations and policies that they administer, are subject to constant review and revision, and some of these changes could have material impacts on our revenues and expenses.

Regulation of Broadband and Cable Video Services

We provide cable and fiber services to customers in franchise areas covering portions of Virginia, West Virginia, western Maryland, and eastern Kentucky.

The provision of cable service generally is subject to regulation by the FCC, and cable operators typically also must comply with the terms of the franchise agreement between the cable operator and the state or local franchising authority. Some states, including Virginia and West Virginia, have enacted regulations and franchise provisions that also can affect certain aspects of a cable operator's operations. Our business can be significantly impacted by changes to the existing regulatory framework, whether triggered by legislative, administrative, or judicial rulings.

The FCC originally classified broadband Internet access services, such as those we offer, as an information service, which by law exempts the service from traditional common carrier communications laws and regulations. In 2015, the FCC determined that broadband Internet access services, such as those we offer, were a form of telecommunications service under the Communications Act and, on that basis, imposed rules (commonly referred to as "Net Neutrality" rules) banning service providers from blocking access to lawful content, restricting data rates for downloading lawful content, prohibiting the attachment of non-harmful devices, giving special transmission priority to affiliates, and offering third parties the ability to pay for priority routing. The 2015 rules also imposed a transparency requirement, *i.e.,* an obligation to disclose all material terms and conditions of our service to consumers.

In 2017, the FCC adopted an order repudiating its treatment of broadband as a telecommunications service, reclassifying broadband as an information service, and eliminating the 2015 rules other than the transparency requirement, which it eased in significant ways. The FCC also ruled that state regulators may not impose obligations similar to federal obligations that the FCC removed. In 2019, the U.S. Court of Appeals for the District of Columbia upheld the information service reclassification, but vacated the FCC's blanket prohibition of state utility regulation of broadband services. The court left open the possibility that individual state laws could still be deemed preempted on a case-by-case basis if it is shown that they conflict with federal law. In October 2020 the FCC, responding to the court's remand order, issued a further decision clarifying certain aspects of its earlier order. In this decision the FCC re-classified broadband internet access service as an unregulated information service, thus eliminating all federal regulatory "network neutrality" obligations beyond requiring broadband providers to accurately disclose network management practices, performance, and commercial terms of service. These issues may be revisited by the FCC in the current administration. At the same time, several states (including California) adopted state obligations replacing the Internet access ("net neutrality" type) obligations that the FCC removed, and we expect that additional states will consider the imposition of new regulations on our Internet services. California's legislation has been challenged in court. We cannot predict how any such state legislation and court challenges will be resolved. Various governmental jurisdictions are also considering additional regulations in these and other areas, such as privacy, pricing, service and product quality, imposition of local franchise fees on Internet-related revenue and taxation. The adoption of new Internet regulations or the adaptation of existing laws to the Internet, including potential liability for the infringing activities of Internet subscribers, could adversely affect our business.

Moreover, irrespective of these cases, and as recent history has shown, it is possible that the FCC might further revise its approach to broadband Internet access in the future, or that Congress might enact legislation affecting the rules applicable to the service.

As the Internet has matured, it has become the subject of increasing regulatory interest. Congress and Federal regulators have adopted a wide range of measures directly or potentially affecting Internet use. The adoption of new Internet regulations or policies could adversely affect our business.

On January 29, 2015, the FCC, in a nation-wide proceeding evaluating whether advanced broadband is being deployed in a reasonable and timely fashion, increased the minimum connection speeds required to qualify as advanced broadband service to 25 Mbps for downloads and 3 Mbps for uploads. As a result, the FCC concluded that advanced broadband was not being sufficiently deployed and initiated a new inquiry into what steps it might take to encourage broadband deployment. This action may lead the FCC to adopt additional measures affecting our broadband business. The FCC has ongoing proceedings to allocate additional spectrum for advanced wireless service, which could provide additional wireless competition to our broadband business. On January 30, 2020, the FCC adopted an order approving the Rural Digital Opportunity Fund (RDOF) to disburse $20.4 billion over the course of ten years to subsidize the deployment of networks for the provision of high-speed broadband internet access and voice services in unserved areas via a reverse auction. We prevailed as a winning bidder in the RDOF auction of approximately $5.9 million in Virginia and West Virginia to provide broadband and voice service to unserved areas. Final award of that support is subject to further FCC review of the Company's long-form application and supporting materials. In addition, our ability to receive this support is dependent upon satisfying network buildout, service delivery and other obligations under FCC regulations. The FCC reverse auction will award a total of $9.23 billion in subsidies to competitive providers, some of which may be directed to competitive providers in some of the states in which we operate. In December 2020, Congress authorized additional funding for grants administered by the Department of Commerce to fund construction of new broadband facilities. Competitors that are awarded funds to serve unserved areas near our network may by necessity or choice build new facilities that pass through our existing service territories, which could result in increased competition for our broadband service offerings.

Our Beam Internet service is provisioned over a fixed wireless network using radio spectrum licensed, or available to, the Company. Beam Internet service is directly or indirectly subject to many of the same regulations discussed in this section, including but not limited to spectrum allocation and licensing, disclosure of network management practices, consumer privacy, cybersecurity, facilities siting, pole attachments, accessibility and various consumer protection requirements.

Pricing and Packaging. Our cable services are no longer subject to rate regulation and our Internet services have never been rate-regulated. In December 2020 these services became subject to a federal law requiring itemization of certain charges, and we must also comply with generally-applicable marketing and advertising requirements. Congress and the FCC from time to time have considered imposing new pricing, packaging and consumer protection restrictions on cable operators. We cannot predict whether or when any such new marketing restrictions may be imposed on us or what effect they would have on our ability to provide cable service.

Must-Carry/Retransmission Consent. Local broadcast television stations can require a cable operator to carry their signals pursuant to federal “must-carry” requirements. Alternatively, local television stations may require that a cable operator obtain “retransmission consent” for carriage of the station’s signal, which can enable a popular local television station to obtain concessions from the cable operator for the right to carry the station’s signal. Although some local television stations today are carried by cable operators under the must-carry obligation, popular broadcast network affiliated stations, such as ABC, CBS, FOX, CW and NBC, typically are carried pursuant to retransmission consent agreements. The retransmission consent costs charged by broadcast networks affiliate stations are increasing rapidly. We cannot predict the extent to which such retransmission consent costs may increase in the future or the effect such cost increases may have on our ability to provide cable service.

Copyright Fees. Cable operators pay compulsory copyright fees, in addition to possible retransmission consent fees, to retransmit broadcast programming. Although the cable compulsory copyright license has been in place for more than 40 years, there have been legislative and regulatory proposals to modify or even replace the compulsory license with privately negotiated licenses. We cannot predict whether such proposals will be enacted and how they might affect our business.

Programming Costs. Satellite-delivered cable programming, such as ESPN, HBO and the Discovery Channel, is not subject to must-carry/retransmission consent regulations or a compulsory copyright license. The Company negotiates directly or through the National Cable Television Cooperative (“NCTC”) with satellite-delivered cable programmers for the right to carry their programming. The cost of acquiring the right to carry satellite-delivered cable programming can increase as programmers demand rate increases.

Franchise Matters. Cable operators generally must apply for and obtain non-exclusive franchises from local or state franchising authorities before providing video service. The terms and conditions of franchises vary among jurisdictions, but franchises generally last for a fixed term and are subject to renewal, require the cable operator to collect a franchise fee of as much as 5% of the cable operator’s gross revenue from video services, and contain certain service quality and customer service obligations. We believe that our franchise renewal prospects are generally favorable but cannot guarantee the future renewal of any individual franchise. A significant number of states today have processes in place for obtaining state-wide franchises, and legislation and regulation have been introduced from time to time in Congress, the FCC, and in various states, including those in which we provide some form of video service, that would modify franchising processes, potentially lowering barriers to entry and increasing competition in the marketplace for video services. Virginia's franchising statute largely leaves franchising responsibility in the hands of local municipalities and counties, but it governs the local government entities’ award of such franchises and their conduct of franchise negotiations. We cannot predict the extent to which these rules and other developments will accelerate the pace of new entry into the video market or the effect, if any, they may have on our cable operations.

Pole Attachments. The Communications Act requires investor-owned ("IO") utilities and telecommunications carriers to provide cable systems with access to poles and conduits and simultaneously subjects the rates charged for this access to either federal or state regulation. The FCC rules do not directly affect pole attachment rates in states that self-regulate (rather than allow the FCC to regulate) pole rates, but many of those states have substantially the same rate for cable and telecommunications attachments. Kentucky, Pennsylvania and West Virginia, three states in which we operate, self-regulate IO pole attachments but do so in using essentially the same rate formula and other pole attachment rules as the FCC. The FCC pole attachment rules also do not govern government or cooperatively owned utilities. States, however, are free to regulate such utilities and some do. Of the states in which Shentel operates, Virginia and Kentucky currently regulate cooperatively owned pole attachments. In 2018, the FCC interpreted another federal law governing state and local regulation of public rights of way to impose cost-based limitations on what government entities may charge for pole attachments. This interpretation was upheld against challenge by the United States Court of Appeals for the Ninth Circuit.

In 2018, the FCC adopted rules to permit a "one-touch" make-ready process for poles subject to its jurisdiction. The "one touch" make-ready rules allow new attachers to alter certain components of existing attachments for "simple make-ready" (i.e. where the alteration of existing attachments does not involve a reasonable expectation of a service outage, splicing, pole replacement or relocation of a wireless attachment). The rules are intended to promote broadband deployment and competition by facilitating communications attachments, although there are concerns regarding potential damage to existing networks by third parties. Certain aspects of the rules are still pending reconsideration at the FCC. Other aspects were upheld against challenge by the United States Court of Appeals for the Ninth Circuit. Although West Virginia and Pennsylvania self-regulate, both states have adopted the FCC's "one touch" make-ready rules.

Privacy. The Company is subject to various federal and state laws intended to protect the privacy of end-users who subscribe to the Company's services. For example, the Communications Act of 1934, as amended (the "Communications Act"), limits our ability to collect, use, and disclose customers' personally identifiable information for our cable television/video, voice, and Internet services. We are subject to additional federal, state, and local laws and regulations that impose additional restrictions on the collection, use and disclosure of consumer information. Further, the FCC, the Federal Trade Commission ("FTC"), and many states regulate and restrict the marketing practices of communications service providers, including telemarketing and sending unsolicited commercial emails. The FCC also has regulations that place restrictions on the permissible uses that we can make of customer-specific information, known as Customer Proprietary Network Information ("CPNI"), received from telecommunications service subscribers, and that govern procedures for release of such information in order to prevent identity theft schemes. Other laws impose criminal and other penalties for the violation of certain CPNI requirements and related privacy protections.

As a result of the FCC's December 2017 decision to reclassify broadband Internet access service as an "information service," the FTC has the authority to enforce against unfair or deceptive acts and practices, to protect the privacy of Internet service customers, including our use and disclosure of certain customer information.

Many states and local authorities have considered legislative or other actions that would impose additional restrictions on our ability to collect, use and disclose certain information. California's Consumer Privacy Act and associated regulations, which became effective in 2020, under certain circumstances regulate the sale and disclosure of the personal information of California residents, grants California residents certain rights to, among other things, access and delete data about them in certain circumstances, and authorizes enforcement actions by the California Attorney General and certain private class actions. Compliance with the CCPA may increase the cost of providing our services to customers who may be residents in California and increase our litigation exposure. We expect continued federal and state efforts to regulate online privacy, data security and cybersecurity to continue in 2021. We cannot predict whether any of these efforts will be successful, or how new legislation and regulations, if any, would affect our business. These efforts have the potential to create a patchwork of differing and/or conflicting state and/or federal regulations, and to increase the cost of providing our services.

Our operations are also subject to federal and state laws governing information security. In the event of an information security breach, such rules may require consumer and government agency notification and may result in regulatory enforcement actions with the potential of monetary forfeitures.

In addition, restrictions exist, and new restrictions are considered from time to time by Congress, federal agencies and states, on the extent to which wireless customers may receive unsolicited telemarketing calls, text messages, junk e-mail or spam. Congress, federal agencies and certain states also are considering, and may in the future consider imposing, additional requirements on entities that possess consumer information to protect the privacy of consumers. The Company is required to file an annual certification of compliance with the FCC's CPNI rules. Complying with these requirements may impose costs on the Company or compel the Company to alter the way it provides or promotes its services.

Accessibility. The FCC imposes obligations on multi-channel video programming distributors ("MVPDs"), intended to ensure that individuals with disabilities are able to access and use video programming services and equipment. FCC rules require video programming delivered on MVPD systems to be closed captioned unless exempt and require MVPDs to pass through captions to consumers and to take all steps needed to monitor and maintain equipment to ensure that captioning reaches the consumer intact. Video programming delivered over the Internet must be captioned if it was delivered previously on television with captions. An MVPD must also pass through audio description provided in broadcast and non-broadcast programming if it has the technical capability to do so, unless it is using the required technology for another purpose. FCC rules also require MVPDs to ensure that critical details about emergencies conveyed in video programming are accessible to persons with disabilities, and that video programming guides are accessible to persons who are blind or visually impaired. We cannot predict if or when additional changes will be made to the current FCC accessibility rules, or whether and how such changes will affect us.

Voice over Internet Protocol "VoIP" Services. We provide voice communications services over our cable network utilizing interconnected VoIP technology and service arrangements. Although similar to telephone service in some ways, our VoIP service arrangement utilizes different technology and is subject to many of the same rules and regulations applicable to traditional telephone service. The FCC order adopted on October 27, 2011 established rules governing intercarrier compensation payments for the origination and termination of telephone traffic between carriers and VoIP providers. In May 2014 the United States Court of Appeals for the Tenth Circuit upheld the FCC order reducing intercarrier compensation payments. The rules have substantially decreased intercarrier compensation payments we may have otherwise received over a multi-year period. The decreases over the multi-year transition have affected both the amounts that we pay to telecommunications carriers and the amounts that we receive from other carriers. The schedule and magnitude of these decreases, however, has varied depending on the nature of the carriers and the telephone traffic at issue. These changes have had a negative impact on our revenues and expenses for voice services at particular times over this multi-year period.

Further regulatory changes are being considered that could impact our VoIP service. The FCC and state regulatory authorities are considering, for example, whether certain common carrier regulations traditionally applied to incumbent local exchange carriers (including RLECs) should be modified or reduced, and the extent to which common carrier requirements should be extended to VoIP providers. The FCC has required VoIP providers to comply with requirements relating to 911 emergency services, the Communications Assistance for Law Enforcement Act ("CALEA"), Universal Service Fund ("USF") contribution, customer privacy and CPNI issues, number portability, network outage, rural call completion, disability access, battery backup, robocall mitigation, regulatory fees, and discontinuance of service. We cannot predict whether the FCC will impose additional obligations on our VoIP services in the future.

In March 2007, a federal appeals court affirmed the FCC's decision concerning federal regulation of certain VoIP services, but declined to specifically find that VoIP service provided by cable companies, such as we provide, should be regulated only at the federal level. As a result, certain states, including West Virginia, began proceedings to subject cable VoIP services to state-level regulation. Although the West Virginia proceeding concluded without any new state-level regulation, it is difficult to predict whether it, or other state regulators, will continue to attempt to regulate our VoIP service. We have registered with, or obtained certificates or authorizations from, the FCC and the state regulatory authorities in those states in which we offer competitive voice services in order to ensure the continuity of our services and to maintain needed network interconnection arrangements. It is not clear how the FCC Order to reclassify wireline and wireless broadband services as Title II common carrier services, and pursuant to Section 706, will affect the regulatory status of our VoIP services. Further, it is also unclear whether and how these and other ongoing regulatory matters ultimately will be resolved.

Prospective competitors of our Broadband segment may also receive disbursements from the USF. Some of those competitors have requested USF support under the Connect America Fund to build broadband facilities in areas already served by our Broadband networks. Although we have opposed such requests where we offer service, we cannot predict whether the FCC or another agency will grant such requests or otherwise fund broadband service in areas already served by the company.

Other Issues. Our ability to provide video service may be affected by a wide range of additional regulatory and related issues, including FCC regulations pertaining to licensing of systems and facilities, set-top boxes, equipment compatibility, program exclusivity blackouts, commercial leased access of video channels by unaffiliated third parties, advertising, public files, accessibility to persons with disabilities, emergency alerts, equal employment opportunity, privacy, consumer protection, and technical standards. Further, the FCC is currently considering proposals to reallocate for other purposes certain spectrum currently used by satellite providers to deliver video programming to individual cable systems, which could be disruptive to the satellite video delivery platform we rely upon to provide our video services. We cannot predict the nature and pace of these and other developments or the effect they may have on our operations.

Regulation of Shenandoah Telephone Company ("Shenandoah Telephone")

State Regulation. Shenandoah Telephone Company is a rural local exchange carrier ("RLEC") serving Shenandoah County, Virginia and portions of Rockingham and Augusta County Virginia. Shenandoah Telephone's rates for local exchange service, intrastate toll service, and intrastate access charges are subject to the approval of the Virginia State Corporation Commission, ("VSCC"). The VSCC also establishes and oversees implementation of certain provisions of the federal and state telecommunications laws, including interconnection requirements, promotion of competition, and consumer protection standards. The VSCC also regulates rates, service areas, service standards, accounting methods, affiliated transactions and certain other financial transactions. Pursuant to the FCC's October 27, 2011 order adopting comprehensive reforms to the federal intercarrier compensation and universal service policies and rules (as discussed above and further below), the FCC preempted state regulatory commissions' jurisdiction over all terminating access charges, including intrastate terminating access charges, which historically have been within the states' jurisdiction. However, the FCC vested in the states the obligation to monitor the tariffing of intrastate rate reductions for a transition period, to oversee interconnection negotiations and arbitrations, and to determine the network edge, subject to FCC guidance, for purposes of the new "bill-and-keep" framework. A federal appeals court has affirmed the decision. The outcome of those further challenges could modify or delay the effectiveness of the FCC's rule changes. During 2017 the FCC initiated a further proceeding to consider whether additional changes to interconnection obligations are needed, including how and where companies interconnect their networks with the networks of other providers. Although we are unable to predict the ultimate effect that the FCC's order will have on the state regulatory landscape or our operations, the rules may decrease or eliminate revenue sources or otherwise limit our ability to recover the full value of our network assets.

Interconnection. Federal law and FCC regulations impose certain obligations on incumbent local exchange carriers (including RLECs) to interconnect their networks with other telecommunications providers (either directly or indirectly) and to enter into interconnection agreements with certain types of telecommunications providers. Interconnection agreements typically are negotiated on a statewide basis and are subject to state approval. If an agreement cannot be reached, parties to interconnection negotiations can submit unresolved issues to federal or state regulators for arbitration. Disputes regarding intercarrier compensation can be brought in a number of forums (depending on the nature and jurisdiction of the dispute) including public utility commissions ("PUCs"), the FCC, and the courts. The Company is working to resolve routine interconnection and intercarrier compensation-related disputes concerning the volume of traffic exchanged between the Company and third parties, appropriate access rates, and terms for the origination and termination of traffic on third-party networks.

Regulation of Intercarrier Compensation. Shenandoah Telephone participates in the access revenue pools administered by the FCC-supervised National Exchange Carrier Association ("NECA"), which collects and distributes the revenues from interstate access charges that long-distance carriers pay us for originating and terminating interstate calls over our network. Shenandoah Telephone also participates in some NECA tariffs that govern the rates, terms, and conditions of our interstate access offerings. Some of those tariffs are under review by the FCC, and we may be obligated to refund affected access charges collected in the past or in the future if the FCC ultimately finds that the tariffed rates were unreasonable. We cannot predict whether, when, and to what extent such refunds may be due.

On October 27, 2011, the FCC adopted a number of broad changes to the intercarrier compensation rules governing the interstate access rates charged by small-to-mid-sized RLECs such as Shenandoah Telephone that have had a material impact on our revenues. For example, the FCC adopted a national "bill-and-keep" framework, which will result in substantial reductions in the access charges paid by long distance carriers and other interconnecting carriers, possibly to zero, accompanied by increases to the subscriber line charges paid by business and residential end users. In addition, the FCC has changed some of the rules that determine what compensation voice service providers, including but not limited to wireless carriers, competitive local exchange carriers, VoIP providers and providers of other Internet-enabled services, should pay and receive for originating and terminating traffic that is interconnected with RLEC networks.

The VSCC has jurisdiction over local telephone companies' intrastate access charges, and has indicated in the past that it might open a generic proceeding on the rates charged for intrastate access, although the scope and likelihood of such a proceeding is unclear in light of the FCC's overhaul of the intercarrier compensation rules (discussed above), which affect states' jurisdiction over intrastate access charges.

Universal Service Fund. Shenandoah Telephone receives disbursements from the USF. In October 2011, the FCC adopted comprehensive changes to the universal service program. Some of the FCC's reforms impact the rules that govern disbursements from the USF to RLECs such as Shenandoah Telephone, and to other providers. These rules have resulted in a substantial decrease in intercarrier compensation payments over a multi-year period. The Company is not able to predict if or when additional changes will be made to the USF, or whether and how such changes would affect the extent of our total federal universal service assessments, the amounts we receive, or our ability to recover costs associated with the USF.

If the Universal Service Administrative Company ("USAC") were required to account for the USF program in accordance with generally accepted accounting principles for federal agencies under the Anti-Deficiency Act (the "ADA"), it could cause delays in USF payments to fund recipients and significantly increase the amount of USF contribution payments charged to wireline and wireless consumers. Each year since 2004, Congress has adopted short-term exemptions for the USAC from the ADA. Congress has from time to time considered adopting a longer term exemption for the USAC from the ADA, but we cannot predict whether any such exemption will be adopted or the effect it may have on the Company.

In 2012, the FCC released an order making substantial changes to the rules and regulations governing the federal USF Lifeline Program, which provides discounted telephone services to low income consumers. The order imposes greater recordkeeping and reporting obligations, and generally subjects providers of Lifeline-supported services to greater oversight. In 2016, the FCC released a second substantial Lifeline order that amended the program to provide support for broadband services and phase out support for voice services. Included among the new rules was a requirement that any eligible telecommunications carrier ("ETC") which offered broadband service, on its own or through an affiliate, must also offer Lifeline-supported broadband service. Due to this requirement, our Company began offering Lifeline-supported broadband in areas where it operates as an ETC. In 2017, the FCC released a Lifeline order that included clarifications to the 2016 Lifeline order and proposed reforms aimed at improving program integrity. As a result of our Company providing Lifeline-supported services, we are subject to increased reporting and recordkeeping requirements, and could be subject to increased regulatory oversight, investigations or audits. The FCC, USAC and other authorities have conducted, and in the future are expected to continue to conduct, more extensive audits of USF support recipients, as well as other heightened oversight activities. The impact of these activities on the Company, if any, is uncertain.

Other Regulatory Obligations. Shenandoah Telephone is subject to requirements relating to CPNI, CALEA implementation, interconnection, access to rights of way, number portability, number pooling, accessibility of telecommunications for those with disabilities, robocalls mitigation, protection for consumer privacy, and other obligations similar to those discussed above for our wireless operations.

The FCC and other authorities continue to consider policies to encourage nationwide advanced broadband infrastructure development. For example, the FCC has largely deregulated DSL and other broadband services offered by RLECs. Such changes benefit our RLEC, but could make it more difficult for us (or for NECA) to tariff and pool DSL costs. Broadband networks and services are subject to CALEA rules, network management disclosure and prohibitions, requirements relating to consumer privacy, and other regulatory mandates.

911 Services. We are subject to FCC rules that require telecommunications carriers to make emergency 911 services available to their subscribers, including enhanced 911 services that convey the caller's telephone number and detailed location information to emergency responders. In December 2013 the FCC adopted a rule requiring all 911 service providers that serve a public safety answering point (a "PSAP") or other local emergency responder, to take reasonable measures to ensure 911 circuit diversity, availability of backup power at central offices that directly serve PSAPs, and diversity of network monitoring links. Further, in August 2019 the FCC adopted new 911-related requirements for service providers offering customers multiline telephone system solutions to business and enterprise customers. These new requirements require Shentel to take certain additional action to ensure emergency responders can properly respond to 911 calls, such as the delivery of specific location information and notices.

Long Distance Services. We offer long distance service to our customers through our subsidiary, Shenandoah Cable Television, LLC. Our long distance rates are not subject to FCC regulation, but we are required to offer long distance service through a subsidiary other than Shenandoah Telephone, to disclose our long distance rates on a website, to maintain geographically averaged rates, to pay contributions to the USF and make other mandatory payments based on our long-distance revenues, and to comply with other filing and regulatory requirements. In November 2013 the FCC issued an order imposing greater recordkeeping and reporting obligations on certain long distance providers delivering calls to rural areas. The order imposes greater recordkeeping and quarterly reporting obligations on such providers, and generally subjects such providers to greater oversight.

Regulation of Wireless Services

Our discontinued Wireless operations operate using radio spectrum made available by Sprint under the Sprint affiliate agreement. Our discontinued Wireless operations are directly or indirectly subject to, or affected by, a number of regulations and requirements of the FCC and other governmental authorities that apply to providers of commercial mobile radio services ("CMRS"), including but not limited to roaming, interconnection, spectrum allocation and licensing, facilities siting, pole attachments, intercarrier compensation, 911 access, consumer protection, disclosure of network management practices, consumer privacy, and cybersecurity.

Interconnection. Federal law and FCC regulations impose certain obligations on CMRS providers to interconnect their networks with other telecommunications providers (either directly or indirectly) and to enter into interconnection agreements with certain types of telecommunications providers. Interconnection agreements typically are negotiated on a statewide basis and are subject to state approval. If an agreement cannot be reached, in certain cases parties to interconnection negotiations involving CMRS providers can submit unresolved issues to federal or state regulators for arbitration. In addition, FCC regulations previously required that local exchange carriers and CMRS providers establish reciprocal compensation arrangements for the termination of traffic to one another. Disputes regarding intercarrier compensation can be brought in a number of forums (depending on the nature and jurisdiction of the dispute) including state PUCs, the FCC and the courts. The Company does not presently have any material interconnection or intercarrier compensation disputes with respect to its wireless operations.

On December 18, 2014, the FCC issued a declaratory ruling that provides additional guidance concerning how the agency will evaluate the reasonableness of data roaming agreements. The agency clarified that it will consider the reasonableness of data roaming rates based upon, in part, whether such rates exceed retail, international and resale rates, as well as how such rates compare to other providers' rates. The ruling also clarifies other aspects of the FCC's 2011 data roaming order concerning the appropriate presumptions applied to certain contract terms and the inclusion of build-out terms when considering the reasonableness of roaming rates and terms. The ruling is expected to provide improved negotiating leverage to Sprint, and other providers, in negotiating new data roaming agreements with AT&T and Verizon. It is unclear whether such leverage will result in lower data roaming rates for Sprint, or whether such reduced rates will accrue to the benefit of our operations. There is also a possibility that the ruling could provide a basis for smaller wireless providers to seek more beneficial terms in their roaming agreements with Sprint, which may impact roaming costs in our territory.

Universal Service Contribution Requirements. Consistent with the terms of our affiliate agreement, Sprint is required to contribute to the federal universal service fund (the "USF") based in part on the revenues it earns in connection with our wireless operations. The purpose of this fund is to subsidize telecommunications and broadband services in rural areas, for low-income consumers and for schools, libraries and rural healthcare facilities. Sprint is permitted to, and does, pass through these mandated payments as surcharges paid by its subscribers.

Transfers, Assignments and Changes of Control of Spectrum Licenses. The FCC must give prior approval to the assignment of ownership or control of a spectrum license, as well as transfers involving substantial changes in such ownership or control. The FCC also requires licensees to maintain effective working control over their licenses. Our affiliate agreement reflects an alliance that the parties believe meets the FCC requirements for licensee control of licensed spectrum. If the FCC were to determine that the affiliate agreement should be modified to increase the level of licensee control, we have agreed with Sprint to use our best efforts to modify the affiliate agreement as necessary to cause it to comply with applicable law and to preserve to the extent possible the economic arrangements set forth in the affiliate agreement. If the affiliate agreement cannot be modified, it may be terminated pursuant to its terms. The FCC could also impose sanctions on the Company for failure to meet these requirements.

Spectrum licenses are granted for ten-year terms. Sprint's spectrum licenses for our service area are scheduled to expire on various dates throughout the term of our affiliate agreements. Spectrum licensees have an expectation of license renewal if they can satisfy three "safe harbor" certifications which, if made, will result in routine processing and grant of the license renewal application. Those certifications require the licensee to certify that it has satisfied any ongoing provision of service requirements applicable to the spectrum license, that it has not permanently discontinued operations (defined as 180 days continuously off the air), and that it has substantially complied with applicable rules and policies. If for some reason a licensee cannot meet these safe harbor requirements, it can file a detailed renewal showing based on the actual service provided by the station. All of the PCS licenses used in our wireless business have been successfully renewed since their initial grant.

We also utilize spectrum, pursuant to licenses issued directly to us or leased from third-parties, to deliver our Beam Internet service over a fixed wireless network. The spectrum licenses we hold are generally granted for ten-year terms. Spectrum licensees have an expectation of license renewal if they can satisfy three "safe harbor" certifications which, if made, will result in routine processing and grant of the license renewal application. Those certifications require the licensee to certify that it has satisfied any ongoing provision of service requirements applicable to the spectrum license, that it has not permanently discontinued operations (defined as 180 days continuously off the air), and that it has substantially complied with applicable rules and policies. If for some reason a licensee cannot meet these safe harbor requirements, it can file a detailed renewal showing based on the actual service provided by the station.

Construction and Operation of Wireless Facilities. Wireless systems must comply with certain FCC and Federal Aviation Administration (“FAA”) regulations regarding the registration, siting, marking, lighting and construction of transmitter towers and antennas. The FCC also requires that aggregate radio frequency emissions from every site meet certain standards. These regulations affect site selection for new network build-outs and may increase the costs of improving our network. We cannot predict what impact the costs and delays from these regulations could have on our operations.

The construction of new towers, and in some cases the modification of existing towers, may also be subject to environmental review pursuant to the National Environmental Policy Act of 1969 (“NEPA”), which requires federal agencies to evaluate the environmental impacts of their decisions under some circumstances. FCC regulations implementing NEPA place responsibility on each applicant to investigate any potential environmental effects of a proposed operation, including health effects relating to radio frequency emissions, and impacts on endangered species such as certain migratory birds, and to disclose any significant effects on the environment to the agency prior to commencing construction. In the event that the FCC determines that a proposed tower would have a significant environmental impact, the FCC would require preparation of an environmental impact statement, which would be subject to public comment.

In addition, tower construction is subject to regulations including the National Historic Preservation Act. Compliance with FAA, environmental or historic preservation requirements could significantly delay or prevent the registration or construction of a particular tower or make tower construction more costly. On July 15, 2016, Congress enacted new tower marking requirements for certain towers located in rural areas, which may increase our operational costs. However, statutory changes adopted by Congress in the 2018 FAA Reauthorization Act may ameliorate or mitigate some of those costs. In some jurisdictions, local laws or regulations may impose similar requirements.

Wireless Facilities Siting. States and localities are authorized to engage in forms of regulation, including zoning and land-use regulation, which may affect our ability to select and modify sites for wireless facilities. States and localities may not engage in forms of regulation that effectively prohibit the provision of wireless services, discriminate among functionally equivalent services or regulate the placement, construction or operation of wireless facilities on the basis of the environmental effects of radio frequency emissions. Courts and the FCC are routinely asked to review whether state and local zoning and land-use actions should be preempted by federal law, and the FCC also is routinely asked to consider other issues affecting wireless facilities siting in other proceedings. We cannot predict the outcome of these proceedings or the effect they may have on us.

Communications Assistance for Law Enforcement Act. The CALEA was enacted in 1994 to preserve electronic surveillance capabilities by law enforcement officials in the face of rapidly changing telecommunications technology. CALEA requires telecommunications carriers and broadband providers, including the Company, to modify their equipment, facilities and services to allow for authorized electronic surveillance based on either industry or FCC standards. The FCC extended CALEA obligations to VoIP and broadband services in 2005.

Local Number Portability. All covered CMRS providers, including the Company, are required to allow wireless customers to retain their existing telephone numbers when switching from one telecommunications carrier to another. These rules are generally referred to as wireless local number portability ("LNP"). The future volume of any porting requests, and the processing costs related thereto, may increase our operating costs in the future. We are currently in compliance with LNP requirements. The FCC has selected a new Local Number Portability Administrator, and the transition to a new Local Number Portability Administrator may impact our ability to manage number porting and related tasks, or may result in additional costs related to the transition.

Number Pooling. The FCC regulates the assignment and use of telephone numbers by wireless and other telecommunications carriers to preserve numbering resources. CMRS providers in the top 100 markets are required to be capable of sharing blocks of 10,000 numbers among themselves in subsets of 1,000 numbers ("1000s-block number pooling"); the FCC considers state requests to implement 1000s-block number pooling in smaller markets on a case-by-case basis, and has granted such requests in the past. In addition, all CMRS carriers, including those operating outside the top 100 markets, must be able to support roaming calls on their network placed by users with pooled numbers. Wireless carriers must also maintain detailed records of the numbers they have used, subject to audit. The pooling requirements may impose additional costs and increase operating expenses on us and limit our access to numbering resources. We are currently in compliance with the FCC number pooling requirements.

Telecommunications Relay Services ("TRS"). Federal law requires wireless service providers to take steps to enable the hearing impaired and other disabled persons to have reasonable access to wireless services. The FCC has adopted rules and regulations implementing this requirement to which we are subject, and requires that we pay a regulatory assessment to support such telecommunications relay services for the disabled. The Company is in compliance with these requirements.

Consumer Privacy. For a discussion of privacy obligations relating to our Wireless business, please see "Regulation of Broadband and Cable Video Services – Privacy," above.

Consumer Protection. Many members of the wireless industry, including us, have voluntarily committed to comply with the Cellular Telecommunication and Internet Association ("CTIA") Consumer Code for Wireless Service, which includes consumer protection provisions regarding the content and format of bills; advance disclosures regarding rates, terms of service, contract provisions, and network coverage; and the right to terminate service after a trial period or after changes to contract provisions are implemented. The FCC and/or certain state commissions have considered or are considering imposing additional consumer protection requirements upon wireless service providers, including billing-related disclosures and usage alerts, as well as the adoption of standards for responses to customers and limits on early termination fees. On December 12, 2013, CTIA filed a letter with the FCC detailing voluntary commitments by large wireless providers, including Sprint, which will permit subscribers and former subscribers to unlock their mobile devices, subject to contract fulfillment time frames for postpaid plans, or after one year for prepaid plans. The carriers have agreed to fully implement the voluntary commitments within 12 months of adoption. Subsequently, on February 11, 2014, CTIA-The Wireless Association adopted six standards on mobile wireless device unlocking into the CTIA Consumer Code for Wireless Service. Finally, on August 1, 2014, the Unlocking Consumer Choice and Wireless Competition Act was enacted to make it easier for consumers to change their cell phone service providers without paying for a new phone. This new statute reverses a decision made by the Library of Congress in 2012 that said it was illegal for consumers to "unlock" their cell phones for use on other networks without their service provider's permission. Adoption of these and other similar consumer protection requirements could increase the expenses or decrease the revenue of the Company's wireless business. Courts have also had, and in the future may continue to have, an effect on the extent to which matters pertaining to the content and format of wireless bills can be regulated at the state level. Any further changes to these and similar requirements could increase our costs of doing business and our costs of acquiring and retaining customers.

Radio Frequency Emission from Handsets. Some studies (and media reports) have suggested that radio frequency emissions from handsets, wireless data devices and cell sites may raise various health concerns, including cancer, and may interfere with various electronic medical devices, including hearing aids and pacemakers. Most of the expert reviews conducted to date have concluded that the evidence does not support a finding of adverse health effects but that further research is appropriate. Courts have dismissed a number of lawsuits filed against other wireless service operators and manufacturers, asserting claims relating to radio frequency transmissions to and from handsets and wireless data devices. However, there can be no assurance that the outcome of other lawsuits, or general public concerns over these issues, will not have a material adverse effect on the wireless industry, including us.

Accessibility. The FCC imposes obligations on telecommunications service providers intended to ensure that individuals with disabilities are able to access and use telecommunications services and equipment. FCC rules require telecommunications service providers, including wireless providers, to be capable of transmitting 911 calls from persons who are deaf, hard of hearing or speech disabled, including through text telephone ("TTY") capability over the public switched telephone network ("PSTN"), various forms of PSTN-based and internet protocol ("IP")-based TRS, and text-to-911 (where available). The FCC rules allow wireless telecommunications service providers to transition to use of real time text ("RTT") in lieu of TTY technology for communications using wireless IP-based voice services. In addition, telecommunications services, including Voice over Internet Protocol ("VoIP"), and advanced communications services ("ACS") (such as email and text messaging) must be accessible to and usable by disabled persons, including by ensuring that email and texts are compatible with commonly used screen readers, unless doing so is not achievable. FCC rules require that customer support for covered telecommunications and ACS services (including website based) is accessible and also imposes extensive recordkeeping for both telecommunications services and ACS, and subject providers to significant penalties for non-compliance with accessibility requirements as well as for falsely certifying compliance with recordkeeping obligations. FCC rules also require us to offer a minimum number of hearing aid-compatible (“HAC”) handsets to consumers.

911 Services. We are subject to FCC rules that require wireless carriers to make emergency 911 services available to their subscribers, including enhanced 911 services that convey the caller’s telephone number and detailed location information to emergency responders. The FCC has also sought public comment to investigate further requirements regarding the accuracy of wireless location information transmitted during an emergency 911 call. Additionally, the FCC adopted rules requiring all wireless carriers to support the ability of consumers to send text messages to 911 in all areas of the country where 911 Public Safety Answering Points (“PSAP”) are capable of receiving text messages. Also, in May 2013, the FCC adopted rules which require CMRS providers to provide an automatic “bounce-back” text message when a subscriber attempts to send a text message to 911 in a location where text-to-911 is not available. In August 2014, the FCC ordered that all CMRS and interconnected text providers must be capable of supporting text-to-911 by December 31, 2014. Such covered text providers had until June 30, 2015, to begin delivering text-to-911 messages to PSAPs that have submitted requests for such delivery by December 31, 2014, unless otherwise agreed with the PSAP, and six months to begin delivery after any such request made after December 31, 2014. More recently, in 2020, the FCC proposed substantial fines on the nation’s largest wireless carriers, including Sprint, claiming that there was not an adequate effort to secure real time location data that was sold to third parties. We are not able to predict the effect that these, or any other, changes to the 911 service rules, or potential enforcement actions, will have on our operations.

Human Capital Management

As of December 31, 2020, the Company employed approximately 1,139 people in and around the Mid-Atlantic region of the United States, of which approximately 35% were female, and 26% of managerial employees were female.

Our Chief Human Resources Officer ("CHRO") is responsible for developing and executing the Company’s human capital management strategy in alignment with the business. This includes the attraction, acquisition, development, retention and engagement of talent to deliver on the Company’s strategy, the design of employee compensation and benefits programs, and oversight of our diversity and inclusion efforts. Our CHRO continuously evaluates, modifies, and enhances our internal processes and technologies to increase employee engagement, productivity, and effectiveness. In addition, the Chief Executive Officer ("CEO") and CHRO regularly update the Company’s board of directors and its committees on the operation and status of these human capital trends and management programs. Key areas of focus include:

Culture, Values & Ethics

Shentel is committed to operating in a fair, honest, responsible and ethical manner and we expect our employees to commit to these same principles. The Company has adopted a Code of Business Conduct and Ethics, which is also clearly visible to our customers and vendors on our external Shentel website (https://investor.shentel.com/corporate-governance/governance-overview). Additionally, at time of hire and at least annually, we ask all employees and board members to review and certify their commitment to this Code.

In addition to compliance with our Code of Business Conduct and Ethics, the Company attempts to follow a Positive People Philosophy, which creates the foundation for how all employees work together to drive our collective success. Our culture is built upon values of always looking for opportunities to improve, taking ownership for resolving issues, effectively communicating to solve problems, working collaboratively as a team, and providing leadership by setting positive examples for others to follow.

Workplace Safety

The health and safety of our employees is our highest priority. Exceeding OSHA Regulations is the expectation for Shentel. We have achieved this level of success through our deliberate creation and management of both regional and corporate safety committees. As of December 31, 2020, our commitment to safety has also allowed us to achieve a 2020 OSHA Incident Rate of 0.5, compared to the national utilities industry benchmark of 2.2.

Our focus on safety is also evident in our COVID-19 response. We developed a COVID Task Force Team at the outset of the pandemic which created policies and guidelines based on both the Centers for Disease Control and the Virginia Occupational Safety and Health (VOSH) Program, which have set forth the most stringent guidelines of all of the states in which we operate. These policies and guidelines are focused on keeping both our employees and customers as safe as possible as we continue to operate as an essential business during the pandemic.

Compensation and Benefits

We provide employees with compensation and benefits packages that are market-driven and aligned to a consistent Shentel Compensation and Rewards Philosophy. This philosophy is aligned with the needs of the business, and targeted to be competitive in the Company's designated talent markets. As well as ensuring compensation competitiveness, the primary objectives of Shentel's compensation programs are as follows:

- Create a competitive advantage to attract, motivate and retain the necessary talent for the Company.
- Focus both individual and organizational effort around strategy execution, accountability and Company core values for achieving key business outcomes.
- Emphasize individual performance-based differentiation linked to corporate and shareholder values.
- Establish job and salary structures that are market driven and reviewed on an ongoing basis in order to maintain long-term competitiveness.
- Ensure that pay processes are easily understood.
- Provide a consistent approach to delivering ongoing competitive compensation to employees of the Company. Consistency will be measured in terms of pay positioning relative to the Company's defined competitive survey market as well as in comparison to the Company's overall internal compensation philosophy and objectives.
- Target the 50th percentile of the Company's defined competitive survey market for each relevant compensation component.

Our compensation and rewards program consists of three primary components: Base Salary, Short-Term Incentive and Long-Term Incentive. Base Salary is paid for comparable knowledge, skills and experience. Short-Term Incentive is variable cash compensation designed to recognize and reward extraordinary performance and is based upon the achievement of a combination of Company-wide financial and service performance goals and achievement of individual objectives. Long-Term Incentive is equity based compensation that aligns eligible employees' interests with those of shareholders and encourages a long term focus and retention.

We also provide eligible employees the ability to participate in a 401(k) Plan which has competitive Company contributions, as well as generous health and welfare benefits, paid time off, employee assistance programs, and educational assistance, among many others.

Diversity and Inclusion

We believe that a diverse workforce is critical to our success. Our recent efforts have been focused in three areas: inspiring innovation through an inclusive and diverse culture; expanding our efforts to recruit, hire and retain experienced, diverse talent; and identifying strategic initiatives to accelerate our inclusion and diversity programs.

Training and Talent Management

To empower employees to realize their full potential, we provide a range of leadership development programs and learning opportunities, which emphasize skills and identify resources they can use to be successful. Our Shentel University platform supplements our talent development strategies and provides an online portal that enables employees to access virtual courses and self-directed web-based courses, leveraging both internally and externally developed and hosted content. In addition, we provide our employees with regular leadership and professional development events that focus on how we may best advance our team, effectively execute our business strategies, and continue to develop the talent and potential of our employees. We leverage our training and talent management efforts to ensure we have ready-now successors identified as the Company continues to grow and evolve.

Employee Engagement

Our annual employee satisfaction survey captures critical indicators of employee engagement and provides an overall employee favorability index. During 2020, we conducted our most recent enterprise-wide engagement survey, with the assistance of third party consultants, which focused on measuring engagement, inclusion, and overall employee satisfaction. The overall response rate in our latest survey, conducted in June 2020, was 80% and indicated an overall company favorability of 83%. We will continue to poll our employees and build action plans to address feedback shared by our team members.

Information About Our Executive Officers

The following table presents information about our executive officers who, other than Christopher E. French, are not members of our board of directors. Our executive officers serve at the pleasure of the Board of Directors.

Name	Title	Age	Date in Position
Christopher E. French	President and Chief Executive Officer	62	April 1988
David L. Heimbach	Executive Vice President and Chief Operating Officer	45	May 2018
James J. Volk	Senior Vice President and Chief Financial Officer	57	June 2019
Raymond B. Ostroski	General Counsel, Vice President Legal and Corporate Secretary	66	January 2013
Edward H. McKay	Senior Vice President Engineering and Operations	48	January 2019
William L. Pirtle	Senior Vice President Sales and Marketing	61	January 2019
Heather K. Banks	Vice President and Chief Human Resources Officer	47	July 2019
Elaine M. Cheng	Vice President and Chief Information Officer	48	March 2019
Chase L. Stobbe	Vice President and Chief Accounting Officer	37	April 2019

Mr. French is President and Chief Executive Officer for Shentel. He is responsible for the overall leadership and strategic direction of the Company. He has served as President since 1988, and has been a member and Chairman of the Board of Directors since 1996. Prior to appointment as President, Mr. French held a variety of positions with the Company, including Vice President Network Service and Executive Vice President. Mr. French holds a bachelor's degree in electrical engineering and an MBA, both from the University of Virginia. He has held board and officer positions in both state and national telecommunications associations, including service as a director of the Organization for the Promotion and Advancement of Small Telecommunications Companies (OPASTCO), was president and director of the Virginia Telecommunications Industry Association, and was a member of the Board of Directors and Leadership Committee of the USTelecom Association.

Mr. Heimbach is Executive Vice President and Chief Operating Officer for Shentel. He joined the Company in May 2018, and is a twenty-year veteran of the telecommunications industry, having served in a variety of senior management roles with both large corporations and entrepreneurial start-ups. He most recently served as Chief Operating Officer of Rise Broadband, the nation's largest fixed wireless service provider, with responsibility for sales, marketing, product management, engineering, construction, field and customer operations, and corporate strategy. Prior to joining Rise Broadband, Mr. Heimbach held several executive positions at Cincinnati Bell over a 14 year period including Chief Operating Officer; Senior Vice President/General Manager, Business and Carrier Markets; Vice President and General Manager of the Evolve Business Solutions subsidiary; Vice President Product Development; Director, Small and Medium Business Strategy; Director of Operations, Extended Territories; and Product Manager. Mr. Heimbach holds a B.S. in Communications from the J. Warren McClure School of Information & Telecommunications Systems of Ohio University and is a board member of the American Cable Association.

Mr. Volk is Senior Vice President and Chief Financial Officer. He joined Shentel in June 2019. He has more than 20 years of experience in the telecommunications industry, and has served in a variety of senior financial management roles with both large corporations and high growth, early stage telecommunication providers. He most recently served as Vice President, Finance and Investor Relations of Uniti Group Inc. Prior to joining Uniti, he served as CFO of multiple public and private telecommunication companies, including PEG Bandwidth, Hargray Communications and UbiquiTel Inc. He previously held senior finance positions with AT&T and Comcast. Mr. Volk holds a Bachelor of Science Degree in Accounting from the University of Delaware and a Master of Business Administration from Villanova University.

Mr. Ostroski is General Counsel, Vice President Legal and Corporate Secretary for Shentel. He joined Shentel in 2013 and is responsible for all legal and regulatory compliance matters for the Company. He also acts as Corporate Secretary to the Company's Board of Directors. Mr. Ostroski began his career in the telecommunications industry in 1985, and has served as Executive Vice President and General Counsel for One Communications, Senior Vice President and General Counsel for Commonwealth Telephone Enterprises, Executive Vice President and General Counsel for RCN Corporation and Senior Vice President and General Counsel of C-TEC Corporation. Mr. Ostroski earned a bachelor's degree in Social Science from Wilkes University and also earned a Juris Doctor degree from Temple University School of Law.

Mr. McKay is Senior Vice President Engineering and Operations for Shentel. He was promoted to Senior Vice President in September 2015. His previous position was Vice President - Wireline and Engineering. He is responsible for network planning, engineering, construction and operations for Shentel's networks. Mr. McKay joined Shentel in 2004, and began his telecommunications industry career in 1996, including previous engineering management positions at UUNET and Verizon. He is a graduate of the University of Virginia, where he earned master's and bachelor's degrees in Electrical Engineering. He represents the Company on the Board of ValleyNet.

Mr. Pirtle is Senior Vice President Sales and Marketing. He was promoted to Senior Vice President in September 2015. His previous position was Vice President Wireless, responsible for Shentel's Wireless segment. He is responsible for all sales and marketing efforts across all brands. He joined the Company in 1992, as Vice President Network Services responsible for Shentel's technology decisions, maintenance and operation of its telephone, cable, cellular, paging and fiber optics networks. He helped launch Shentel's Internet business in 1994, and led its participation in its wireless PCS business and Sprint affiliation beginning in 1995. He is a graduate of the University of Virginia. Mr. Pirtle is a co-founder of the Shenandoah Valley Technology Council and has represented the Company on the Board of ValleyNet. Mr. Pirtle is currently a member and chairman of the Competitive Carriers Association board of directors.

Ms. Banks is Vice President and Chief Human Resources Officer at Shentel. She joined the Company in July 2019. Ms. Banks brings more than 20 years of experience in leading and managing strategic HR initiatives to Shentel. Prior to joining Shentel, Ms. Banks was the Chief Human Resources Officer of American Woodmark, headquartered in Winchester, Virginia. Prior to American Woodmark, Ms. Banks held numerous HR leadership positions with a variety of organizations across a range of industries, including Carlisle FoodService Products, UTC Aerospace Systems, Goodrich Corporation, Northern Power Systems, and IGT. She holds a Bachelor of Science in Psychology from Florida State University and a Master of Arts in Industrial Organizational Psychology from the University of New Haven. Additionally, Ms. Banks serves as Vice President on the Board of Trustees for the Powhatan School in Boyce, VA.

Ms. Cheng is Vice President and Chief Information Officer for Shentel. She joined the Company in March 2019 and has more than 20 years of experience in diverse business environments across all areas of Information Technology. Prior to joining Shentel, Ms. Cheng served as Chief Information Officer and Managing Director of Global Strategic Design for CFA Institute in Charlottesville, Va. Prior to her time at CFA Institute, Ms. Cheng held a number of different roles over 16 years with M&T Bank in Buffalo, NY, including Group Vice President, Technology Business Services, Vice President of Retail Operations and Assistant Vice President, Web Product Owner. She received her Bachelor of Arts degree from Vassar College and her Masters of Business Administration from the University of Rochester. Additionally, Ms. Cheng is a founding board member of Charlottesville Women in Tech, a non-profit organization which encourages women to join and thrive in technology careers.

Mr. Stobbe is Vice President and Chief Accounting Officer at Shentel. Mr. Stobbe is responsible for the leadership of Shentel's accounting function. He joined Shentel in April 2019. Previously, he was a senior manager at KPMG LLP, where he focused on serving public telecommunications companies. He has led diverse teams and has extensive knowledge of U.S. GAAP and internal control over financial reporting. He holds both Bachelor and Master degrees in Accounting from the University of Missouri-Kansas City and is a certified public accountant.

Websites and Additional Information

The Company maintains a corporate website at *www.shentel.com.* We make available free of charge, through our website, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and all amendments to those reports, as soon as reasonably practicable after we electronically file or furnish such reports with or to the Securities and Exchange Commission ("SEC"). The contents of our website are not a part of this report. In addition, the SEC maintains a website at *www.sec.gov* that contains reports, proxy and information statements and other information regarding the Company.

ITEM 1A. **RISK FACTORS**

Our business and operations are subject to a number of risks and uncertainties. The risks set forth under "Part I Item 1. Business" and the following risk factors should be read carefully in connection with evaluating our business. The following risks (or additional risks and uncertainties not presently known to us) could materially affect our financial condition, liquidity, or operating results, as well as the price of our common stock.

Risks Related to Our Business

Intensifying competition may limit our ability to sustain profitable operations.

As new technologies are developed and deployed by competitors in our service area, some of our subscribers may select other providers' offerings based on price, capabilities or personal preferences. Most of our competitors possess greater resources, have greater brand recognition, have more extensive coverage areas, have access to spectrum or technologies not available to us, are able to offer bundled service offerings that we are not able to duplicate and offer more services than we do. If significant numbers of our subscribers elect to move to competing providers, or if market saturation limits the rate of new subscriber additions, we may not be able to sustain profitable operations.

The Company's revenue from fiber leases may be adversely impacted by price competition for these facilities.

Consumers are increasingly accessing video content from alternative sources, such as Internet-based "over the top" providers such as Netflix, Amazon, and Hulu, and related platforms. The influx of competitors in this area, together with the development of new technologies to support them, are resulting in significant changes in the video business models and regulatory provisions that have applied to the provision of video and other services. These developments have led to a loss of video subscribers due to "cord cutting" as customers adopt alternative sources and may lead to a decline in the demand, price and profitability of our cable and related video services.

Incumbent cable companies also face competition from direct broadcast satellite providers, and from large providers of wireline telecommunications services (such as Verizon, CenturyLink and AT&T), which have upgraded their networks in certain markets outside of our cable footprint to provide video services in addition to voice and broadband services and may offer bundled service offerings that we are not able to duplicate. Wireless providers are also entering the market for video services by making such services available on handsets and tablets. In some areas, direct broadcast satellite providers have partnered with large incumbent telecommunications service providers to offer triple-play services.

Nationwide, incumbent local exchange carriers have experienced a decrease in access lines due to the effect of wireless and wireline competition. We have experienced reductions in the number of access lines to date, and based on industry experience we anticipate that the long-term trend toward declining telephone subscriber counts will continue. There is a significant risk that this downward trend will have an adverse effect on the Company's landline telephone operations in the future.

Our future growth is partially dependent upon our edge-out strategy, which may or may not be successful.

We are strategically focused on driving growth by expanding our broadband network in order to provide service in communities that are near or adjacent to our network. This edge-out strategy includes our fiber to the home and fixed wireless broadband services, which we offer under the Glo Fiber and Beam Internet brands, respectively. These brands are relatively new in the marketplace. This strategy requires considerable management resources and capital investment and it is uncertain whether and when it will contribute to positive free cash flow. As a result, we expect our capital expenditures to exceed the cash flow provided from continuing operations through 2023. Additionally, we must obtain pole attachment agreements, franchises, construction permits, and other regulatory approvals to commence operations in these communities. Delays in entering into pole attachment agreements, receiving the necessary franchises and construction permits, procuring needed contractors, materials or supplies, and conducting the construction itself could adversely impact our scheduled construction plans. Difficulty in obtaining necessary resources may also adversely affect our ability to expand into new markets. We may face resistance from competitors who are already in markets we wish to enter. If our expectations regarding our ability to attract customers in these communities are not met, or if the capital requirements to complete the network investment or the time required to attract our expected level of customers are incorrect, our financial performance may be negatively impacted.

Many of our competitors are larger than we are and possess greater resources than we do.

In some instances, we compete against companies with fewer regulatory burdens, greater personnel resources, greater resources for marketing, greater brand name recognition, and long-established relationships with regulatory authorities and customers. We are realigning our corporate expenses to reflect the forthcoming sale of our Wireless assets and operations. This initiative will take multiple years and be enabled by certain of our information technology initiatives. If we are unable to sufficiently build the necessary infrastructure and internal support functions to scale and expand our network and customer base, our potential growth would be limited. We may not be able to successfully compete with these competitors or be able to make the operational or financial investments necessary to successfully serve the targeted customer base.

Alternative technologies, changes in the regulatory environment and current uncertainties in the marketplace may reduce future demand for existing telecommunication services.

The telecommunications industry is experiencing significant technological change, evolving industry standards, ongoing improvements in the capacity and quality of digital technology, shorter development cycles for new products and enhancements and changes in end-user requirements and preferences. Technological advances, industry changes, changes in the regulatory environment and the availability of additional spectrum or additional flexibility with respect to the use of currently available spectrum could cause the technology we use to become obsolete. We may not be able to respond to such changes and implement new technology on a timely basis or at an acceptable cost. Additionally, we may be required to select one developing or new technology over another and may not choose the technology that is ultimately determined to be the most economic, efficient or attractive to customers. We may also encounter difficulties in implementing new technologies, products and services and may encounter disruptions in service as a result.

Our distribution networks may be subject to weather-related events that may damage our networks and adversely impact our ability to deliver promised services or increase costs related to such events.

Our distribution networks may be subject to weather-related events that could damage our networks and impact service delivery. Some published reports predict that warming global temperatures will increase the frequency and severity of such weather-related events. Should such predictions be correct or if for other reasons there are more weather-related events, and should such events impact the Mid-Atlantic region covered by our networks more frequently or more severely than in the past, our revenues and expenses could be materially adversely impacted.

Our programming costs are subject to demands for increased payments.

The cable television industry has continued to experience an increase in the cost of programming, especially sports programming and retransmission fees. In addition, as we add programming to our video services for existing customers or distribute existing programming to more customers, we incur increased programming expenses. Broadcasters affiliated with major over-the-air network services have been increasing their demands for cash payments and other concessions for the right to carry local network television signals on our cable systems. As compared to large national providers, our smaller base of subscribers limits our ability to negotiate lower programming costs. If we are unable to raise our customers' rates, these increased programming costs could have an adverse impact on our results of operations. Moreover, as our programming contracts and retransmission agreements with programming providers expire, there can be no assurance that they will be renewed on acceptable terms which could lead to a loss of video customers.

Negative outcomes of legal proceedings may adversely affect our business and financial condition.

We may become involved in legal proceedings from time to time. These proceedings may be complicated, costly and disruptive to our business operations. We might also incur significant expenses in defending these matters or may be required to pay significant fines, awards and settlements. Any of these potential outcomes, such as judgments, awards, settlements or orders could have a material adverse effect on our business, financial condition, operating results or our ability to do business.

We may not benefit from our acquisition strategy.

As part of our business strategy, we regularly evaluate opportunities to enhance the value of the Company by pursuing acquisitions of other businesses. Although we remain subject to financial and other covenants in our credit agreement that may limit our ability to pursue certain strategic opportunities, we intend to continue to evaluate and, when appropriate, pursue strategic acquisition opportunities as they arise. We cannot provide any assurance, however, with respect to the timing, likelihood, size or financial effect of any potential transaction involving the Company, as we may not be successful in identifying and consummating any acquisition or in integrating any newly acquired business into our operations.

The evaluation of business acquisition opportunities and the integration of any acquired businesses pose a number of significant risks, including the following:

- acquisitions may place significant strain on our management, financial and other resources by requiring us to expend a substantial amount of time and resources in the pursuit of acquisitions that we may not complete, or to devote significant attention to the various integration efforts of any newly acquired businesses, all of which will require the allocation of limited resources;
- acquisitions may not have a positive impact on our cash flows or financial performance;
- even if acquired companies eventually contribute to an increase in our cash flows or financial performance, such acquisitions may adversely affect our operating results in the short term as a result of transaction-related expenses we will have to pay or the higher operating and administrative expenses we may incur in the periods immediately following an acquisition as we seek to integrate the acquired business into our operations;
- we may not be able to realize anticipated synergies, achieve the desired level of integration of the acquired business or eliminate as many redundant costs;
- we may not be able to maintain relationships with customers, suppliers and other business partners of the acquired business;
- our operating and financial systems and controls and information services may not be compatible with those of the companies we may acquire and may not be adequate to support our integration efforts, and any steps we take to improve these systems and controls may not be sufficient;
- our business plans and projections used to justify the acquisitions and expansion investments are based on assumptions of revenues per subscriber, penetration rates in specific markets where we operate and expected operating costs. These assumptions may not develop as projected, which may negatively impact our profitability or the value of our intangible assets;
- growth through acquisitions will increase our need for qualified personnel, who may not be available to us or, if they were employed by a business we acquire, remain with us after the acquisition; and
- acquired businesses may have unexpected liabilities and contingencies, which could be significant.

Adverse economic conditions in the United States and in our market area involving significantly reduced consumer spending could have a negative impact on our results of operations.

Unfavorable general economic conditions could negatively affect our business. Although it is difficult to predict the impact of general economic conditions on our business, these conditions could adversely affect the affordability of, and customer demand for our services, and could cause customers to delay or forgo purchases of our services. Any national economic weakness, restricted credit markets, or high unemployment rates could depress consumer spending and harm our operating performance. In addition, any material adverse economic conditions that affect our geographic markets in particular could have a disproportionately negative impact on our results.

The COVID-19 pandemic has disrupted, and the future outbreak of other highly infectious or contagious diseases could disrupt, the operation of our business resulting in adverse impacts to our financial condition, results of operations, and cash flow and could create significant volatility in the trading and value of the Company's common stock.

Since being reported in December 2019, an outbreak of a new strain of coronavirus ("COVID-19") has spread globally, including to every state in the United States. In March 2020, the World Health Organization declared COVID-19 a pandemic and the United States declared a national emergency. The COVID-19 pandemic has negatively impacted the global economy, disrupted global supply chains, and created significant volatility and disruption of financial markets, and another pandemic in the future could have similar effects. Given the ongoing and dynamic nature of the circumstances, it is difficult to predict the impact of COVID-19 on the Company, and there is no guarantee that efforts by Shentel, designed to address adverse impacts of the coronavirus, will be effective.

Governments in the markets in which we operate have taken a number of actions in response to the pandemic, including mandating that residents stay at home, temporarily closing businesses that are not considered essential and limiting hours of businesses or the number of customers that may be served.

The Company has also limited non-essential travel, in-person meetings and large employee meetings, while also implementing a work-from-home policy to encourage all employees whose job responsibilities permit remote working to do so. Our transition to a work-from-home policy for many employees could impact the ability of our employees to advance research and development projects as efficiently or productively as they could in an office setting. The extent and duration of ongoing workplace restrictions and limitations, particularly in sites with significant headcount, could adversely impact our operations and our ability to execute on strategic imperatives for our business. Continued restrictions on travel and limitations on interaction with customers may impact our sales and marketing activities, including our ability to secure new customers, to qualify and sell new products, or to grow sales with customers where or with whom we do not have a longer-standing supply relationship.

In addition, the current COVID-19 pandemic, or a future pandemic, could have material and adverse effects on our ability to successfully operate and on our financial condition, results of operations and cash flows due to, among other factors:

- additional disruptions or delays in our operations or network performance, as well as network maintenance and construction, testing, supervisory and customer support activities, and inventory and supply procurement;

- increases in operating costs, inventory shortages and/or a decrease in productivity related to travel bans and social distancing efforts, which could include delays in our ability to install broadband services at customer locations or require our vendors and contractors to incur additional costs that may be passed on to us;

- a deterioration in our ability to operate in affected areas or delays in the supply of products or services to us from vendors that are needed for our efficient operations;

- increases in health insurance and labor-related costs arising from illness, quarantine and the implementation of social distancing and work-from-home measures;

- increased risk of phishing and other cybersecurity attacks, and increased risk of unauthorized dissemination of sensitive personal information or proprietary or confidential information about us, our customers or other third parties as a result of employees or third-party vendors' employees working remotely;

- a decrease in the ability of our counterparties to meet their obligations to us in full, or at all;

- a general reduction in business and economic activity may severely impact our customers and may cause them to be unable to pay for services provided; and

- the potential negative impact on the health of our personnel, particularly if a significant number of them are impacted, could result in a deterioration in our ability to ensure business continuity during a disruption.

Shentel has implemented policies and procedures designed to mitigate the risk of adverse impacts of the COVID-19 pandemic, or a future pandemic, on the Company's operations, but may incur additional costs to ensure continuity of business operations caused by COVID-19, or other future pandemics, which could adversely affect its financial condition and results of operations. However, the extent of such impacts will depend on future developments, which are highly uncertain and cannot be predicted, including new information that may emerge concerning the severity of COVID-19 and actions taken to contain COVID-19 or its impact. Additionally, to the extent the COVID-19 pandemic adversely affects our business, financial condition or results of operations, it may heighten other risks described in this "Risk Factors" section.

We have an underfunded non-contributory defined benefit pension plan.

Through our acquisition of nTelos, we assumed nTelos' non-contributory defined benefit pension plan and other post-retirement benefit plans, covering all employees who met eligibility requirements and were employed by nTelos prior to October 1, 2003. This pension plan was closed to nTelos employees hired on or after October 1, 2003. As of December 31, 2020, the plan was underfunded by approximately $8.0 million. Refer to Note 2, *Summary of Significant Accounting Policies*, included with the Notes to our consolidated financial statements for additional information regarding the accounting for the defined benefit pension and other postretirement benefit plans. We do not expect that we will be required to make a cash contribution to the underfunded pension plan in 2021, but we may be required to make cash contributions in future periods depending on the level of interest rates and investment returns on plan assets.

Disruptions of our information technology infrastructure could harm our business.

We depend on our information technology infrastructure to achieve our business objectives. A disruption of our infrastructure could be caused by a natural disaster, manufacturing failure, telecommunications system failure, cybersecurity or terrorist attack, intrusion or incident, or defective or improperly installed new or upgraded business management systems. Although we make significant efforts to maintain the security and integrity of the Company's information technology infrastructure, there can be no assurance that our security efforts and measures will be effective or that attempted security breaches or disruptions would not be successful or damaging, especially in light of the growing sophistication of cyber-attacks and intrusions sponsored by state or other interests. Portions of our information technology infrastructure also may experience interruptions, delays or cessations of service or produce errors in connection with systems integration or migration work that takes place from time to time. In the event of any such disruption, we may be unable to conduct our business in the normal course. Moreover, our business involves the processing, storage and transmission of data, which would also be negatively affected by such an event. A disruption of our infrastructure could cause us to lose customers and revenue, particularly during a period of heavy demand for our services. We also could incur significant expense in repairing system damage and taking other remedial measures.

We have identified material weaknesses in our internal controls over financial reporting that, if not properly corrected, could materially adversely affect our operations and result in material misstatements in our financial statements.

In accordance with Section 404 of the Sarbanes-Oxley Act, we, along with our independent registered public accounting firm, are required to report on the effectiveness of our internal controls over financial reporting. Failure to design and maintain effective internal controls could constitute a material weakness which could result in inaccurate financial statements, inaccurate disclosures or failure to prevent fraud.

As of December 31, 2020, we did not maintain an effective control environment attributable to certain identified material weaknesses. We describe these material weaknesses in Item 9A. Controls and Procedures in this Annual Report on Form 10-K. The identified control deficiencies create a reasonable possibility that a material misstatement to the consolidated financial statements will not be prevented or detected on a timely basis, and therefore we concluded that the deficiencies represent material weaknesses in the Company's internal control over financial reporting and our internal control over financial reporting was not effective as of December 31, 2020. We cannot provide any assurance that these weaknesses will be effectively remediated or that additional material weaknesses will not occur in the future. The existence of these or other material weaknesses in our internal controls over financial reporting could also result in errors in our financial statements that could require us to restate our financial statements, cause us to fail to meet our reporting obligations and cause stockholders to lose confidence in our reported financial information, all of which could materially and adversely affect our business and stock price.

Implementation of our new ERP system could disrupt business operations.

Our current ERP system will no longer be supported by the software vendor after January 2023. We are planning to implement a new ERP system over the next 18 months to replace the current system. Implementing a new ERP system is not only costly but complex and difficult. The implementation requires significant investments of time, money and resources and may result in the diversion of senior management's attention from our ongoing operations. Furthermore, the implementation will result in changes to many of our existing operational, financial and administrative business processes. The new ERP system will require both the implementation of new internal controls and changes to existing internal control frameworks and procedures. If unexpected delays, technical problems or other significant issues arise in connection with the implementation, it could have a material negative impact on our operations, business, financial results and financial condition. There can be no assurance that we will successfully implement our new ERP system or that we will avoid these and other negative impacts from our implementation efforts.

Our success largely depends on our ability to retain and recruit key personnel, and any failure to do so could adversely affect our ability to manage our business.

Our operational results have depended, and our future results will depend, upon the retention and continued performance of our management team, as well as the attraction and retention of relevant engineering and construction resources. The competitive environment for these talents in our industry could adversely impact our ability to retain and hire new key employees and contractors. The loss of the services of key members of management and the inability or delay in hiring new key employees and contractors could adversely affect our ability to manage our business and our future operational and financial results. Moreover, an inability to attract and retain sufficient qualified accounting personnel could adversely affect our ability to maintain an effective system of internal controls or our ability to produce reliable financial reports, which could materially and adversely affect our business and our stock price.

We could suffer a loss of revenue and increased costs, exposure to significant liability, reputational harm and other serious negative consequences if we sustain cyber-attacks or other data security breaches that disrupt our operations or result in the dissemination of proprietary or confidential information about us or our customers or other third parties.

We utilize our information technology infrastructure to manage and store various proprietary information and sensitive or confidential data relating to our operations. We routinely process, store and transmit large amounts of data for our customers, including sensitive and personally identifiable information. We depend on our information technology infrastructure to conduct business operations and provide customer services. We may be subject to data breaches and disruptions of the information technology systems we use for these purposes. Our industry has witnessed an increase in the number, intensity and sophistication of cybersecurity incidents caused by hackers and other malicious actors such as foreign governments, criminals, hacktivists, terrorists and insider threats. Hackers and other malicious actors may be able to penetrate our network security and misappropriate or compromise our confidential, sensitive, personal or proprietary information, or that of third parties, and engage in the unauthorized use or dissemination of such information. They may be able to create system disruptions, or cause shutdowns. Hackers and other malicious actors may be able to develop and deploy viruses, worms, ransomware and other malicious software programs that attack our products or otherwise exploit any security vulnerabilities of our systems. In addition, sophisticated hardware and operating system software and applications that we procure from third parties may contain defects in design or manufacture, including "bugs," cybersecurity vulnerabilities and other problems that could unexpectedly interfere with the operation or security of our systems.

The shift to our workforce working remotely as a result of the COVID-19 pandemic has amplified certain risks to our operations and business, including increased demand on our information technology infrastructure and systems, increased phishing and other cybersecurity attacks as hackers and malicious actors try to exploit the uncertainty surrounding the COVID-19 pandemic, and an increase in the number of points of potential attack, such as laptops and mobile devices (both of which are now being used in increased numbers), and any failure to effectively manage these risks, including to timely identify and appropriately respond to any cyber-attacks, may adversely affect our business.

To date, interruptions of our information technology infrastructure have been infrequent and have not had a material impact on our operations. However, because technology is increasingly complex and cyber-attacks are increasingly sophisticated and more frequent, there can be no assurance that such incidents will not have a material adverse effect on us in the future. The consequences of a breach of our security measures, a cyber-related service or operational disruption, or a breach of personal, confidential, proprietary or sensitive data caused by a hacker or other malicious actor could be significant for us, our customers and other affected third parties. For example, the consequences could include damage to infrastructure and property, impairment of business operations, disruptions to customer service, financial costs and harm to our liquidity, costs associated with remediation, loss of revenues, loss of customers, competitive disadvantage, legal expenses associated with litigation, regulatory action, fines or penalties or damage to our brand and reputation.

In addition, the costs to us to eliminate or address the foregoing security challenges and vulnerabilities before or after a cyber incident could be significant. In addition, our remediation efforts may not be successful and could result in interruptions, delays or cessation of service. We could also lose existing or potential customers for our services in connection with any actual or perceived security vulnerabilities in the services.

We are subject to laws, rules and regulations relating to the collection, use and security of user data. Our operations are also subject to federal and state laws governing information security. In the event of a data breach or operational disruption caused by an information security incident, such rules may require consumer and government agency notification and may result in regulatory enforcement actions with the potential of monetary forfeitures as well as civil litigation. We have incurred, and will continue to incur, expenses to comply with privacy and security standards and protocols imposed by law, regulation, industry standards and contractual obligations.

Risks Related to Regulation and Legislation

Regulation by government agencies may increase our costs of providing service or require changes in services, either of which could impair our financial performance.

Our operations are subject to varying degrees of regulation by the FCC, the Federal Trade Commission, the Federal Aviation Administration, the Environmental Protection Agency and the Occupational Safety and Health Administration, as well as by state and local regulatory agencies and franchising authorities. Action by these regulatory bodies could negatively affect our operations and our costs of doing business.

Changes to key regulatory requirements can affect our ability to compete.

Our industry is subject to extensive governmental regulation, which impacts many aspects of our operations. Legislators and regulators at all levels of government frequently consider changing, and sometimes do change, existing statutes, regulations, and interpretations thereof. Future legislative, judicial, or administrative actions may increase our costs or impose additional challenges and restrictions on our business.

Federal law strictly limits the scope of permissible cable rate regulation, and none of our local franchising authorities currently regulate our rates for video services. Our rates for broadband services have historically not been subject to rate regulation. However, as broadband service is increasingly viewed as an essential service, governments could adopt new laws or regulations related to the prices we charge for our services that could adversely impact our existing business model.

The Company operates cable television systems in largely rural areas of Virginia, West Virginia, Maryland and Kentucky pursuant to local franchise agreements. These franchises are not exclusive, and other entities may secure franchise authorizations in the future, thereby increasing direct competition to the Company.

Many franchises establish comprehensive facilities and service requirements, as well as specific customer service standards and monetary penalties for non-compliance. In many cases, franchises are terminable if the franchisee fails to comply with significant provisions set forth in the franchise agreement governing system operations. Franchises are generally granted for fixed terms and must be periodically renewed. Franchising authorities may resist granting a renewal if either past performance or the prospective operating proposal is considered inadequate. Franchise authorities often demand concessions or other commitments as a condition to renewal. If our local franchises are not renewed at expiration we would have to cease operations or, operate under either temporary operating agreements or without a franchise while negotiating renewal terms with the local franchising authorities. Although we have historically renewed our franchises without incurring significant costs, we cannot offer assurance that we will be able to renew, or to renew as favorably, our franchises in the future. A termination of or a sustained failure to renew a franchise in one or more key markets or obtaining such franchise on unfavorable terms could adversely affect our business in the affected geographic area.

Pole attachments are wires and cables that are attached to utility poles. Cable system attachments to investor-owned public utility poles historically have been regulated at the federal or state level, generally resulting in reasonable pole attachment rates for attachments used to provide cable service. In contrast, utility poles owned by municipalities or cooperatives are not subject to federal regulation and are, with exceptions, generally exempt from state regulation and their attachment rates tend to be higher. Future regulatory changes in this area could impact the pole attachment rates we pay utility companies.

The FCC has periodically considered proposals for new regulations intended to make our cable set-top boxes open to other service providers. If enacted, such new regulations concerning set-top boxes could increase our cost for equipment, affect our relationship with our customers, and/or enable third parties to try to offer equipment that accesses disaggregated cable content merged with other services delivered over the Internet to compete with our premium service offerings.

Increases in broadband usage may cause network capacity limitations, resulting in service disruptions, reduced capacity or slower transmission speeds for our customers.

Video streaming services, gaming and peer-to-peer file sharing applications use significantly more bandwidth than other Internet activity such as web browsing and email. As use of these newer services continues to grow, our broadband customers will likely use much more bandwidth than in the past. If this occurs, we could be required to make significant capital expenditures to increase network capacity in order to avoid service disruptions, service degradation or slower transmission speeds for our customers. Alternatively, we could choose to implement network management practices to reduce the network capacity available to bandwidth-intensive activities during certain times in market areas experiencing congestion, which could negatively affect our ability to retain and attract customers in affected markets. Competitive or regulatory constraints may preclude us from recovering costs of network investments designed to address these issues, which could adversely impact our operating margins, results of operations, financial condition and cash flows.

Our services may be adversely impacted by legislative or regulatory changes that affect our ability to develop and offer services or that could expose us to liability from customers or others.

The Company provides broadband Internet access services to its cable and telephone customers through cable modems and DSL. As the Internet has matured, it has become the subject of increasing regulatory interest. Congress and Federal regulators have adopted a wide range of measures directly or potentially affecting Internet use. The adoption of new Internet regulations or policies could adversely affect our business.

In 2015, the FCC determined that broadband Internet access services, such as those we offer, were a form of “telecommunications service” under the Communications Act and, on that basis, imposed rules banning service providers from blocking access to lawful content, restricting data rates for downloading lawful content, prohibiting the attachment of non-harmful devices, giving special transmission priority to affiliates, and offering third parties the ability to pay for priority routing. The 2015 rules also imposed a “transparency” requirement, i.e., an obligation to disclose all material terms and conditions of our service to consumers.

In December 2017, the FCC adopted an order repudiating its prior (2015) treatment of broadband as a “telecommunications service,” reclassifying broadband as an “information service,” and eliminating the rules it had imposed at that time (other than a transparency/disclosure-requirement, which it eased in significant ways). The FCC also ruled that state regulators may not impose obligations similar to federal obligations that the FCC removed. Various parties have challenged this ruling in court, and, we cannot predict how any such court challenges will be resolved. Moreover, it is possible that the FCC might further revise its approach to broadband Internet access, or that Congress might enact legislation affecting the rules applicable to the service. In 2019, the U.S. Court of Appeals for the District of Columbia upheld the information service reclassification, but vacated the FCC’s blanket prohibition of state utility regulation of broadband services. The court left open the possibility that individual state laws could still be deemed preempted on a case-by-case basis if it is shown that they conflict with federal law. In October 2020 the FCC, responding to the court’s remand order, issued a further decision clarifying certain aspects of its earlier order. In this decision the FCC re-classified broadband internet access service as an unregulated information service, thus eliminating all federal regulatory "network neutrality" obligations beyond requiring broadband providers to accurately disclose network management practices, performance, and commercial terms of service. These issues may be revisited by the FCC in the current Administration.

The FCC imposes obligations on telecommunications service providers, including broadband Internet access service providers, and multichannel video program distributors, like our cable company, intended to ensure that individuals with disabilities are able to access and use telecommunications and video programming services and equipment. We cannot predict the nature and pace these requirements and other developments, or the impact they may have on our operations.

Our business may be impacted by new or changing tax laws or regulations and actions by federal, state and/or local agencies, or how judicial authorities apply tax laws.

We expect to pay over $400 million in federal and state income taxes in 2021 from the pending sale of our Wireless assets and operations to T-Mobile. If federal or state income tax rates are increased during 2021, we could pay more income taxes and may need to reduce the expected special dividend payable to shareholders, raise additional indebtedness or lower our available liquidity.

In connection with the products and services we sell, we calculate, collect and remit various federal, state and local taxes, surcharges and regulatory fees to numerous federal, state and local governmental authorities, including federal USF contributions and regulatory fees. In addition, we incur and pay state and local taxes and fees on purchases of goods and services used in our business.

Tax laws are subject to change as new laws are passed and new interpretations of the law are issued or applied. In many cases, the application of tax laws is uncertain and subject to differing interpretations, especially when evaluated against new technologies and telecommunications services, such as broadband internet access and cloud related services.

In the event that we have incorrectly calculated, assessed or remitted amounts that were due to governmental authorities, we could be subject to additional taxes, fines, penalties or other adverse actions, which could materially impact our business, financial condition and operating results. In the event that federal, state and/or local municipalities were to significantly increase taxes on our network, operations or services, or seek to impose new taxes, it could have a material adverse effect on our business, financial condition, operating results or ability to do business.

Risks Related to the Sale of our Discontinued Wireless Operations

The sale of our discontinued Wireless operations is pending and may not close.

Our discontinued Wireless operations have been an affiliate of Sprint since 1999.

On August 26, 2020, Sprint Corporation (“Sprint”), an indirect subsidiary of T-Mobile US, Inc., ("T-Mobile"), on behalf of and as the direct or indirect owner of Sprint PCS, delivered notice to the Company exercising its option to purchase the assets and operations of our Wireless operations, ("Shentel Wireless"), for 90% of the “Entire Business Value” (as defined under our affiliate agreement and determined pursuant to the appraisal process set forth therein). Shortly thereafter, the Company committed to a plan to sell the discontinued Wireless operations.

The final and binding appraisal process was completed on February 1, 2021. Expected sale proceeds are $1.95 billion based upon the appraisal process and other agreements between the parties.

We expect to enter into a definitive asset purchase agreement with T-Mobile during the first quarter 2021 and expect that the transaction will close during the second quarter 2021, subject to customary closing conditions and required regulatory approvals.

The Company currently expects to use the after-tax proceeds from the sale of Shentel Wireless to, among other things:

- As required by our credit agreement, repay approximately $702 million of outstanding term loans and swap liabilities and terminate the respective agreement;
- Issue a special dividend of $18.75 per share to Shentel's shareholders (the "Special Dividend");
- Provide adequate liquidity for growth and potential strategic acquisitions; and

- Provide liquidity for general corporate purposes.

While the Company expects to pay the special dividend after the close of the Wireless sale, this declaration is subject to the approval of Shentel's Board of Directors.

It is uncertain if we will be able to agree to terms with T-Mobile on the asset purchase agreement, secure the required regulatory approvals and close on the transaction with T-Mobile. If we do not close on the transaction with T-Mobile, we will not be able to declare and pay a special dividend to our shareholders, our ability to continue to profitably operate our wireless business may be compromised and this could cause significant volatility in the trading and value of our common stock.

In the event that the sale of our discontinued Wireless operations does not close, our ability to comply with the financial covenants under the agreement governing our secured credit facilities will depend primarily on our success in generating sufficient operating cash flow. Under our credit agreement, we are subject to a total leverage ratio covenant, a minimum debt service coverage ratio covenant and a minimum liquidity test. Industry conditions and financial, business and other factors, including those we identify as risk factors in this and our other reports, will affect our ability to generate the cash flows we need to satisfy those financial tests and ratios. Our failure to satisfy the tests or ratios could result in a default and acceleration of repayment of the indebtedness under our credit facilities. If the maturity of our indebtedness were accelerated, we may not have sufficient funds to repay such indebtedness. In such event, to the extent permitted by our credit agreement and applicable law, our lenders would be entitled to proceed against the collateral securing the indebtedness, which includes substantially all of our assets and the assets of our subsidiaries.

Because our Wireless segment has historically represented a large portion of our consolidated revenue, if the sale to of our Wireless assets and operations to T-Mobile is completed, our business will be substantially different.

The revenue generated from our Wireless segment for the years ended December 31, 2020, 2019 and 2018 constituted approximately 67%, 70% and 71% of our consolidated revenue for those years, respectively. Although we expect the revenue generated from our remaining segments to grow in the future, our business will be substantially different following the sale to of our Wireless assets and operations to T-Mobile, and there can be no assurance that we will achieve sustained growth, reduce Corporate overhead expenses or achieve improvement in our financial condition and results of operations in our remaining segments or in new products or business opportunities we may pursue.

In addition, since our focus following the closing of the sale will be on building long-term shareholder value with our remaining segments, investors and analysts may have different expectations for our company to produce improved quarterly financial results for our remaining segments as compared to the periods prior to the sale to of our Wireless assets and operations. This might cause fluctuations in our stock price as well as distractions for our management and our board of directors, and might at times conflict with our desire to build long-term stockholder value.

Our stockholders may not receive any distribution from the sale of our Wireless assets and operations and may never receive any return of value.

The Company's Board of Directors has not made a final determination of the use of the proceeds from the sale of our Wireless assets and operations to T-Mobile. The Company may use the net proceeds from the sale for general corporate purposes, which may include, without limitation, funding growth initiatives, strategic acquisition opportunities, repayment or refinancing of debt or other corporate obligations, capital expenditures, working capital, and repurchases and redemptions of securities. Stockholders may not directly receive any liquidity from the sale and the only return to them may be based on any future appreciation in our stock price or upon a future sale or liquidation of us. Much depends on our future business, including the success or failure of our remaining business. There are no assurances that we will be successful, and current stockholders may never receive a return on their investment.

There can be no assurances that we will be successful in investing the proceeds of the sale of our Wireless assets and operations.

The process to identify potential investment opportunities, growth initiatives, strategic acquisition opportunities and to evaluate the future returns therefrom and business prospects thereof can be time consuming and uncertain. Our management could spend or invest the proceeds from the sale of our Wireless assets and operations in ways with which our stockholders may not agree, and our management and the Board of Directors may authorize such spending or investment without seeking stockholder approval. The investment of these proceeds may not yield a favorable return and there can be no assurances that we will be successful in the investment of these proceeds.

Risks Related to our Indebtedness

We are required to repay all outstanding amounts under our credit agreements when the sale of our discontinued Wireless operations closes. We may not be able to obtain additional credit facilities on terms that are acceptable to us or as favorable as those of our existing facilities.

Under the agreement governing our secured credit facilities, we are required to repay all of our term loans and terminate our $75 million revolving credit facility when the sale of our discontinued Wireless operations closes.

We may not be able to issue new indebtedness to recapitalize our continuing operations under terms that we find acceptable. If we do not raise additional indebtedness, we may have to scale back our network edge-out growth strategy or reduce the value of the special dividend that we plan to declare and pay to shareholders following the sale of our wireless business to T-Mobile.

We may not be able to repay future indebtedness raised after the closing of the sale of our wireless operations.

As discussed in the Risks Related to our Business section above, we expect our capital expenditures to exceed the cash flow provided from continuing operations through 2023 as we invest in our network edge-out strategy. We may not be able to generate sufficient cash flows from operations in 2024 and beyond or to raise additional capital in amounts necessary for us to repay any future indebtedness when such indebtedness becomes due and to meet our other cash needs.

Our level of indebtedness could adversely affect our financial health and ability to compete.

As of December 31, 2020, we had $688.5 million of total indebtedness. Our level of indebtedness could have important adverse consequences. For example, it may:

- increase our vulnerability to general adverse economic and industry conditions, including interest rate increases, because as of December 31, 2020, a significant portion of our borrowings were, and may continue to be, subject to variable rates of interest;
- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness, thereby reducing the availability of our cash flow to fund working capital, capital expenditures, dividends and other general corporate purposes;
- limit our ability to borrow additional funds to alleviate liquidity constraints, as a result of financial and other restrictive covenants in our credit agreement;
- limit our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate; and
- place us at a competitive disadvantage relative to companies that have less indebtedness.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The Company owns or leases switching and data centers, office and retail space, and warehouses that support its operations located across a multi-state area covering large portions of central and western Virginia, south-central Pennsylvania, West Virginia, and portions of Maryland, and Kentucky. The Company also has fiber optic hubs or points of presence in Pennsylvania, Maryland, Virginia and West Virginia. The Company considers the properties owned or leased generally to be in good operating condition and suitable for its business operations.

ITEM 3. LEGAL PROCEEDINGS

None

PART II

ITEM 5. **MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES**

Market Information

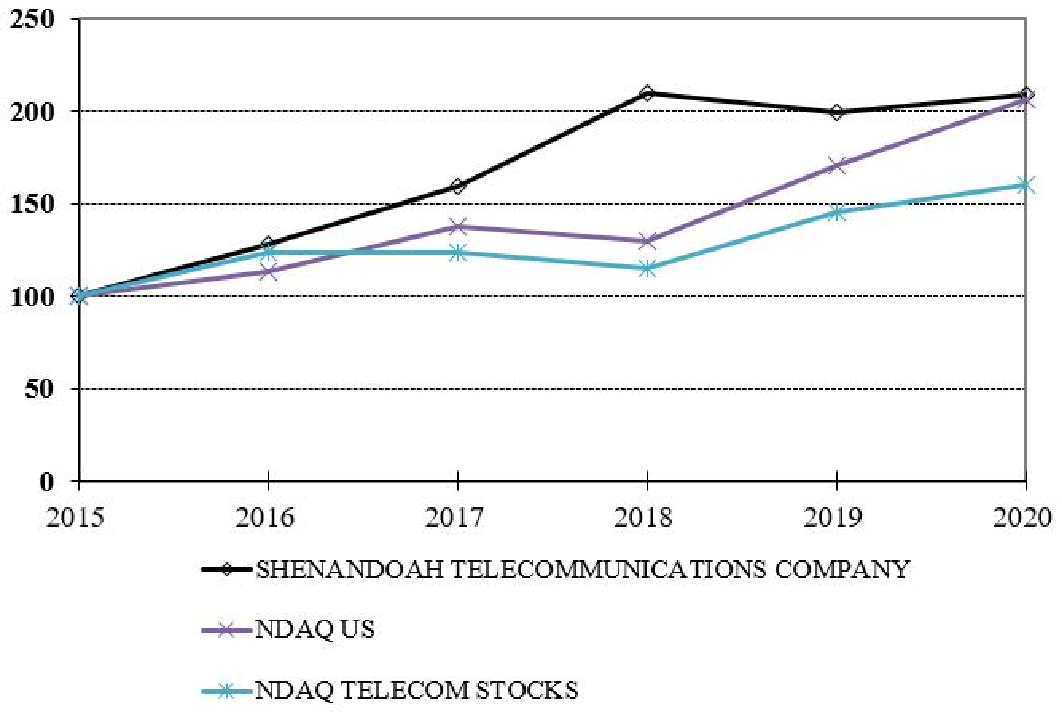
The Company's stock is traded on the Nasdaq Global Select Market under the symbol "SHEN." The following table indicates the closing high and low sales prices per share of common stock as reported by the Nasdaq Global Select Market for each quarter during the last two years:

2020	High	Low
Fourth Quarter	$ 47.47	$ 42.87
Third Quarter	56.14	42.36
Second Quarter	58.64	44.22
First Quarter	49.50	39.32

2019	High	Low
Fourth Quarter	$ 41.73	$ 29.61
Third Quarter	41.63	30.70
Second Quarter	45.27	36.40
First Quarter	51.18	43.28

Stock Performance Graph

The following graph and table show the cumulative total shareholder return on the Company's common stock compared to the Nasdaq US Index and the Nasdaq Telecommunications Index for the period between December 31, 2015 and December 31, 2020. The graph tracks the performance of a $100 investment, with the reinvestment of all dividends, from December 31, 2015 to December 31, 2020.



	2015	2016	2017	2018	2019	2020
Shenandoah Telecommunications Company	$ 100	$ 128	$ 160	$ 210	$ 199	$ 208
NDAQ US	$ 100	$ 113	$ 137	$ 130	$ 170	$ 206
NDAQ Telecom Stocks	$ 100	$ 124	$ 124	$ 115	$ 146	$ 160

Holders

As of February 23, 2021, there were 3,876 holders of record of the Company's common stock.

Dividend Policy

Under the Company's credit agreement, the Company is restricted in its ability to pay dividends in the future. So long as no Default or Event of Default, as defined in the credit agreement, exists before or will result after giving effect to such dividends, distributions or redemptions on a pro forma basis, the Company may declare or pay a lawful dividend or other distribution of assets, or retire, redeem, purchase or otherwise acquire capital stock in an aggregate amount which when added to any such dividends, distributions or redemptions of capital stock or other equity interest made, declared or paid from January 1, 2016 to the date of declaration, does not exceed $25 million plus 60% of the Company's consolidated net income (excluding non-cash extraordinary items such as write-downs or write-ups of assets, other than current assets).

The table below sets forth the cash dividends per share of our common stock that our board of directors declared during the following years:

	Years Ended December 31,				
	2016	2017	2018	2019	2020
Cash Dividend	$ 0.25	$ 0.26	$ 0.27	$ 0.29	$ 0.34

The Company expects to pay the Special Dividend in the second quarter 2021 after the close of the Shentel Wireless transaction, subject to the approval of Shentel's Board of Directors.

Dividend Reinvestment Plan

The Company maintains a dividend reinvestment plan (the "DRIP") for the benefit of its shareholders. When shareholders remove shares from the DRIP, the Company issues whole shares in book entry form, pays out cash for any fractional shares, and cancels the fractional shares. In conjunction with the vesting of shares or exercise of stock options, the grantees may surrender awards necessary to cover the statutory tax withholding requirements and any amounts required to cover stock option strike prices associated with the transaction.

Based on the current number of shares enrolled in the DRIP, the Company expects that 1.5 million new shares of common stock will be issued to DRIP participants during the first half of 2021 in connection with the Special Dividend.

Purchases of Equity Securities by the Issuer or Affiliated Purchasers

The following table provides information about shares surrendered during the fourth quarter ended December 31, 2020, to settle employee tax withholding related to the vesting of stock awards and through the share repurchase program.

($ in thousands, except per share amounts)	Number of Shares Surrendered	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (1)	Approximate Dollar Value that May Yet be Purchased under the Plans or Programs
October 1 to October 31	—	$ —	$ —	$ —
November 1 to November 30	758	$ 46.88	—	$ —
December 1 to December 31	—	—	—	$ —
Total	758		—	

ITEM 6. **SELECTED FINANCIAL DATA**

The following table sets forth selected consolidated financial data for the years presented and at the dates indicated below. Our historical results are not necessarily indicative of our results in any future periods. The summary of our consolidated financial data set forth below should be read together with our consolidated financial statements and related notes, as well as the sections entitled "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," included elsewhere in this Annual Report on Form 10-K. All periods reflect the operating results, cash flows, and financial position, related to our Wireless operations as discontinued operations. Additionally, those assets and liabilities which are expected to transfer in the sale of our discontinued Wireless operations are presented as held for sale in our Consolidated Balance Sheets.

	Years Ended December 31,		
(in thousands, except share and per share amounts)	**2020**	**2019**	**2018**
Revenue	$ 220,775	$ 206,862	$ 192,683
Operating expenses	221,922	207,581	195,652
Operating loss	(1,147)	(719)	(2,969)
Income tax (benefit) expense	(586)	173	(1,343)
Income from continuing operations	2,626	2,388	2,077
Income from discontinued operations, net of tax	124,097	53,568	44,518
Net income	$ 126,723	$ 55,956	$ 46,595
Shareholder Information:			
Shares outstanding	49,867,676	49,670,603	49,630,119
Net income per share, basic and diluted:			
Basic - Income from continuing operations	$ 0.05	$ 0.05	$ 0.04
Basic - Income from discontinued operations, net of tax	$ 2.49	$ 1.07	$ 0.90
Basic net income per share	$ 2.54	$ 1.12	$ 0.94
Diluted - Income from continuing operations	$ 0.05	$ 0.05	$ 0.04
Diluted - Income from discontinued operations, net of tax	$ 2.48	$ 1.07	$ 0.89
Diluted net income per share	$ 2.53	$ 1.12	$ 0.93
Cash dividends per share	$ 0.34	$ 0.29	$ 0.27

	Years Ended December 31,		
	2020	**2019**	**2018**
Cash and cash equivalents	$ 195,397	$ 101,651	$ 85,086
Assets held for sale	$ 1,133,294	$ 1,196,575	$ 910,596
Total assets	$ 2,031,707	$ 1,898,902	$ 1,487,488
Liabilities held for sale	$ 452,202	$ 422,335	$ 46,487
Total liabilities	$ 1,449,313	$ 1,426,474	$ 1,043,254
Capital expenditures	$ 120,450	$ 67,048	$ 56,631

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

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with our "Selected Financial Data" and our consolidated financial statements and notes thereto appearing elsewhere in this Annual Report on Form 10-K. In addition to historical consolidated financial information, the following discussion and analysis may contain forward-looking statements that involve risks, uncertainties and assumptions. Our actual results could differ materially from those anticipated by forward-looking statements as a result of many factors. We discuss factors that we believe could cause or contribute to these differences below and elsewhere in this Annual Report on Form 10-K, including those set forth under "Part I. Cautionary Statement Regarding Forward-Looking Statements" and "Part I. Item 1A. Risk Factors".

Overview

Shenandoah Telecommunications Company ("Shentel", "we", "our", "us", or the "Company"), is a provider of a comprehensive range of broadband communication services and cell tower colocation space in the Mid-Atlantic portion of the United States.

Management's Discussion and Analysis is organized around our reporting segments. Refer to Item 1 above for our description of our reporting segments and a description of their respective business activities. Also see Note 3, *Discontinued Operations*, and Note 15, *Segment Reporting*, in our consolidated financial statements for additional information.

2020 Developments

Results of Operations

Revenue

As described in Item 1, *Business* we earn revenue primarily through our provision of broadband services that include broadband internet, video, voice, and fiber optic Ethernet, wavelength and leasing services in our Broadband segment. Our Broadband segment revenue is driven primarily by the number of our customers that subscribe to our broadband services, and their selection from our respective rate plans. Our Tower segment leases colocation space on our owned cell towers to wireless carriers. Our Tower segment revenue is driven primarily by the number of cell towers that we own, and our ability to secure colocation leases from wireless carriers.

Operating Expenses

Our operating expenses consist primarily of cost of services, selling, general and administrative, and depreciation and amortization expenses.

Other Income (Expense)

Our other income (expense) consists primarily of interest expense and other income. Our other income primarily represents interest and dividends earned from our investments, including patronage income that is connected with our CoBank loan agreements.

Income Tax Expense

Income tax expense consists of federal and state income taxes in the United States.

Income from Discontinued Operations, net of tax

As discussed in the notes to our consolidated financial statements, the results of our Wireless operations are now presented as discontinued operations.

2020 Compared with 2019

Results of Operations

The Company's consolidated results from operations are summarized as follows:

($ in thousands)	Year Ended December 31, 2020	% of Revenue	2019	% of Revenue	Change $	%
Revenue	$ 220,775	100.0	$ 206,862	100.0	13,913	6.7
Operating expenses	221,922	100.5	207,581	100.3	14,341	6.9
Operating loss	(1,147)	(0.5)	(719)	(0.3)	(428)	59.5
Other income, net	3,187	1.4	3,280	1.6	(93)	(2.8)
Income before taxes	2,040	0.9	2,561	1.2	(521)	(20.3)
Income tax (benefit) expense	(586)	(0.3)	173	0.1	(759)	(438.7)
Income from continuing operations	2,626	1.2	2,388	1.2	238	10.0
Income from discontinued operations, net of tax	124,097	56.2	53,568	25.9	70,529	131.7
Net income	$ 126,723	57.4	$ 55,956	27.0	70,767	126.5

Revenue
Revenue increased approximately $13.9 million, or 6.7%, in 2020 compared with 2019, driven by 31.3% growth in the Tower and 5.4% growth in Broadband segments. Refer to the discussion of the results of operations for the Tower and Broadband segments, included within this annual report, for additional information.

Operating expenses
Operating expenses increased approximately $14.3 million, or 6.9%, in 2020 compared with 2019, driven by incremental Broadband operating expenses incurred to support the launch of our new fiber-to-the-home service, Glo Fiber, and new fixed wireless broadband service, Beam.

Income tax (benefit) expense
Income tax benefit of approximately $0.6 million declined approximately $0.8 million compared with 2019, primarily due to changes in excess tax benefits from stock based compensation and other discrete items.

Income from discontinued operations, net of tax
Income from discontinued operations, net of tax, increased $70.5 million, or 131.7%. The increase was primarily driven by a $48.5 million decline in depreciation and amortization primarily as a result of ceasing depreciation and amortization of assets held for sale during the third quarter of 2020, $25.3 million increase in wireless service revenue driven by our travel revenue settlement with Sprint, a $12.1 million decline in cost of services due to ceasing amortization on our right of use assets under operating leases during the third quarter of 2020, an $8.8 million decline in interest expense driven by lower interest rates on our term loans, partially offset by $27.5 million of higher income tax.

Broadband

Our Broadband segment provides broadband internet, video and voice services to residential and commercial customers in portions of Virginia, West Virginia, Maryland, Pennsylvania, and Kentucky, via hybrid fiber coaxial cable under the brand name of Shentel, fiber optics under the brand name of Glo Fiber and fixed wireless network under the brand name of Beam. The Broadband segment also leases dark fiber and provides Ethernet and Wavelength fiber optic services to enterprise and wholesale customers throughout the entirety of our service area. The Broadband segment also provides voice and DSL telephone services to customers in Virginia's Shenandoah County and portions of adjacent counties as a Rural Local Exchange Carrier ("RLEC"). These integrated networks are connected by an approximately 6,800 fiber route mile network. This fiber optic network also supports our Wireless segment operations, which are currently classified as discontinued operations, and these intercompany transactions are reported at their market value.

The following table indicates selected operating statistics of Broadband:

	December 31, 2020	December 31, 2019	December 31, 2018
Broadband homes passed (1)	246,790	208,298	201,633
Incumbent Cable	208,691	206,575	201,633
Glo Fiber	28,652	1,723	—
Beam	9,447	—	—
Broadband customer relationships (2)	109,458	100,890	95,328
Residential & SMB RGUs:			
Broadband Data	102,812	84,045	75,389
Incumbent Cable	98,555	83,919	75,389
Glo Fiber	4,158	126	—
Beam	99	—	—
Video	52,817	53,673	58,672
Voice	32,646	31,380	29,474
Total Residential & SMB RGUs (excludes RLEC)	188,275	169,098	163,535
Residential & SMB Penetration (3)			
Broadband Data	41.7 %	40.3 %	37.4 %
Incumbent Cable	47.2 %	40.6 %	37.4 %
Glo Fiber	14.5 %	7.3 %	— %
Beam	1.0 %	— %	— %
Video	21.4 %	25.8 %	29.1 %
Voice	14.8 %	16.2 %	15.9 %
Residential & SMB ARPU (4)			
Broadband Data	$ 77.93	$ 78.72	$ 81.71
Incumbent Cable	$ 77.97	$ 78.72	$ 81.71
Glo Fiber	$ 78.90	$ —	$ —
Beam	$ 73.17	$ —	$ —
Video	$ 93.17	$ 87.95	$ 81.67
Voice	$ 29.44	$ 30.68	$ 29.31
Fiber route miles	6,794	6,139	5,641
Total fiber miles (5)	394,316	320,444	300,200

(1) Homes and businesses are considered passed (“homes passed”) if we can connect them to our network without further extending the distribution system. Homes passed is an estimate based upon the best available information. Homes passed will vary among video, broadband data and voice services.
(2) Customer relationships represent the number of billed customers who receive at least one of our services.
(3) Penetration is calculated by dividing the number of users by the number of homes passed or available homes, as appropriate.
(4) Average Revenue Per Data RGU calculation = (Residential & SMB Revenue * 1,000) / average data RGUs / 3 months
(5) Total fiber miles are measured by taking the number of fiber strands in a cable and multiplying that number by the route distance. For example, a 10 mile route with 144 fiber strands would equal 1,440 fiber miles.

Broadband results from operations are summarized as follows:

	Year Ended December 31,				Change	
($ in thousands)	2020	% of Revenue	2019	% of Revenue	$	%
Broadband operating revenue						
Residential & SMB	$ 155,017	75.9	$ 142,290	73.4	12,727	8.9
Commercial Fiber	32,759	16.0	30,410	15.7	2,349	7.7
RLEC & Other	16,571	8.1	21,243	11.0	(4,672)	(22.0)
Total broadband revenue	204,347	100.0	193,943	100.0 %	10,404	5.4
Broadband operating expenses						
Cost of services	83,439	40.8	79,235	40.9	4,204	5.3
Selling, general, and administrative	39,472	19.3	33,545	17.3	5,927	17.7
Depreciation and amortization	41,076	20.1	38,566	19.9	2,510	6.5
Total broadband operating expenses	163,987	80.2	151,346	78.0	12,641	8.4
Broadband operating income	$ 40,360	19.8	$ 42,597	22.0	(2,237)	(5.3)

Residential & SMB revenue
Residential & SMB revenue increased approximately $12.7 million, or 8.9%, during 2020 primarily driven by 22.3% growth in broadband RGUs and penetration improvement.

Commercial Fiber revenue
Commercial Fiber revenue increased approximately $2.3 million, or 7.7%, during 2020 due primarily to an increase in new enterprise and backhaul recurring revenue of $3.9 million partially offset by a decline in amortized upfront fee revenue of $1.6 million.

RLEC & Other revenue
RLEC & Other revenue decreased approximately $4.7 million, or 22.0%, compared with 2019 due primarily to a decline in residential DSL subscribers, lower governmental support, and lower intercompany phone service. We expect RLEC revenue to decline at a slower rate in future periods as subscribers migrate to broadband data services.

Cost of services
Cost of services increased approximately $4.2 million, or 5.3%, compared with 2019, primarily driven by higher compensation expense due to the combination of Glo Fiber and Beam start-up expenses, higher incentive accrual from strong operating results, COVID supplemental pay for customer interfacing employees and enhanced benefit plans.

Selling, general and administrative
Selling, general and administrative expense increased $5.9 million or 17.7% compared with 2019 primarily due to increases in compensation expense of $3.4 million, primarily as a result of Glo Fiber and Beam fixed wireless start-up costs, higher benefit plan and incentive accruals from strong operating results and $2.8 million of higher software and professional fees.

Depreciation and amortization
Depreciation and amortization increased $2.5 million or 6.5%, compared with 2019, primarily as a result of our network expansion and the deployment of infrastructure necessary to support new fiber-to-the-home service, Glo Fiber, and fixed wireless solution, Beam.

Tower

Our Tower segment owns cell towers and leases colocation space on the towers to wireless communications providers, including our Wireless segment that is currently classified as a discontinued operation. Substantially all of our owned towers are built on ground that we lease from the respective landlords. The colocation space that is leased to our discontinued Wireless operations is priced at our estimate of fair market value.

The following table indicates selected operating statistics of the Tower segment:

	December 31, 2020	December 31, 2019	December 31, 2018
Macro tower sites	223	225	208
Tenants (1)	427	404	367
Average tenants per tower	1.8	1.8	1.8

(1) Includes 221, 201 and 174 intercompany tenants for our Wireless operations, (reported as a discontinued operation), and Broadband operations, as of December 31, 2020, 2019 and 2018, respectively.

Tower results from operations are summarized as follows:

	Year Ended December 31,				Change	
($ in thousands)	2020	% of Revenue	2019	% of Revenue	$	%
Tower revenue	$ 17,055	100.0	$ 12,985	100.0 %	4,070	31.3
Tower operating expenses	8,232	48.3	6,690	51.5	1,542	23.0
Tower operating income	$ 8,823	51.7	$ 6,295	48.5	2,528	40.2

Revenue

Revenue increased approximately $4.1 million, or 31.3%, in 2020 compared with 2019. This increase was due to a 5.7% increase in tenants and a 23.4% increase in average revenue per tenant driven by amendments to intercompany leases.

Revenue derived from our wireless operations was approximately $9.7 million and $6.0 million in 2020 and 2019, respectively.

Operating expenses

Operating expenses increased approximately $1.5 million compared to the prior year period, due primarily to increases in ground lease rent expense and professional services.

2019 Compared with 2018

Results of Operations

The Company's consolidated results from operations are summarized as follows:

($ in thousands)	Year Ended December 31, 2019	% of Revenue	2018	% of Revenue	Change $	Change %
Revenue	$ 206,862	100.0	$ 192,683	100.0	14,179	7.4
Operating expenses	207,581	100.3	195,652	101.5	11,929	6.1
Operating loss	(719)	(0.3)	(2,969)	(1.5)	2,250	(75.8)
Other income, net	3,280	1.6	3,703	1.9	(423)	(11.4)
Income before taxes	2,561	1.2	734	0.4	1,827	248.9
Income tax expense (benefit)	173	0.1	(1,343)	(0.7)	1,516	112.9
Income from continuing operations	$ 2,388	1.2	$ 2,077	1.1	311	15.0
Income from discontinued operations, net of tax	53,568	25.9	44,518	23.1	9,050	20.3
Net income	$ 55,956	27.0	$ 46,595	24.2	9,361	20.1

Revenue
Revenue increased approximately $14.2 million, or 7.4%, in 2019 compared with 2018, driven primarily by Broadband data penetration and subscriber growth. Refer to the discussion of the results of operations for the Broadband segment, included within this annual report, for additional information.

Operating expenses
Operating expenses increased approximately $11.9 million, or 6.1%, in 2019 compared with 2018. The increase was primarily due to incremental operating expenses incurred to support the growth of our Broadband segment including the launch of new fiber-to-the-home service, Glo Fiber, as well as maintenance costs to support our larger network.

Other income
Other income decreased approximately $0.4 million, or 11.4%, in 2019 compared with 2018. The decrease was primarily due to changes in the value of our investments and pension obligation.

Income tax expense (benefit)
Income tax expense increased approximately $1.5 million, compared with 2018, primarily driven by the increase in our income before taxes and changes in excess tax benefits from stock based compensation and other discrete items

Income from discontinued operations, net of tax
Income from discontinued operations, net of tax, increased $9.1 million, or 20.3% in 2019 as compared to 2018. The increase was driven by a $10.5 million decline in depreciation expense as certain assets acquired in 2016 became fully depreciated, a decline of $5.6 million in interest expense from lower borrowing rates, service revenue growth of $4.9 million, lower income tax expense of $1.3 million due to changes in taxable income; partially offset by a $12.0 million decline in travel revenue and an increase of $2.2 million in operating expense to facilitate subscriber and network growth.

Broadband

Broadband results from operations are summarized as follows:

	Year Ended December 31,				Change	
($ in thousands)	2019	% of Revenue	2018	% of Revenue	$	%
Broadband operating revenue						
Residential & SMB	$ 142,290	73.4	$ 130,731	71.4	11,559	8.8
Commercial Fiber	30,410	15.7	29,661	16.2	749	2.5
RLEC & Other	21,243	11.0	22,728	12.4	(1,485)	(6.5)
Total broadband revenue	193,943	100.0	183,120	100.0 %	10,823	5.9
Broadband operating expenses						
Cost of services	79,235	40.9	76,731	41.9	2,504	3.3
Selling, general, and administrative	33,545	17.3	28,103	15.3	5,442	19.4
Depreciation and amortization	38,566	19.9	35,992	19.7	2,574	7.2
Total broadband operating expenses	151,346	78.0	140,826	76.9	10,520	7.5
Broadband operating income	$ 42,597	22.0	$ 42,294	23.1	303	0.7

Residential & SMB revenue
Residential & SMB revenue increased approximately $11.6 million, or 8.8%, during 2019 primarily driven by data revenue growth of $7.6 million from an increase in broadband data penetration, video revenue growth of $1.0 million from an increase in ARPU due to a pass through of higher programming costs, voice revenue growth of $0.9 million from growth in SMB voice RGUs, and lower promotional discounts of $1.3 million, partially offset by a decrease in video RGUs.

Commercial Fiber revenue
Enterprise revenue increased approximately $0.7 million, or 2.5%, during 2019 from a combination of 425 new enterprise connections and backhaul revenue growth driven by the Wireless fiber-to-the-tower initiative.

RLEC & Other revenue
RLEC & Other revenue decreased approximately $1.5 million, or 6.5%, compared with 2018, primarily due to a decline in residential DSL subscribers and lower intercompany phone service.

Cost of services
Cost of services increased approximately $2.5 million, or 3.3%, in 2019 compared with 2018, primarily due to $1.1 million of maintenance costs to support our larger network, a $0.6 million increase in programming and retransmission costs, and $0.4 million of cost goods sold on higher volume, consistent with the increase in equipment revenue, and a $0.5 million in compensation costs.

Selling, general and administrative
Selling, general and administrative expense increased $5.4 million or 19.4% compared with 2018 primarily due to $2.5 million of expenses incurred in the launch of Glo Fiber, $1.5 million in payroll increases and $0.8 million in higher advertising.

Depreciation and amortization
Depreciation and amortization increased $2.6 million or 7.2%, compared with 2018, primarily due to the expansion of our broadband network footprint.

Tower
Tower results from operations are summarized as follows:

($ in thousands)	Year Ended December 31, 2019	% of Revenue	2018	% of Revenue	Change $	%
Tower revenue	$ 12,985	100.0	$ 12,196	100.0	789	6.5
Tower operating expenses	6,690	51.5	6,797	55.7	(107)	(1.6)
Tower operating income	$ 6,295	48.5	$ 5,399	44.3	896	16.6

Revenue
Revenue increased approximately $0.8 million, or 6.5%, in 2019 compared with 2018. This increase was due to 10.1% increase in tenants and 2.5% increase in the lease rate.

Revenue derived from our wireless operations was approximately $6.0 million and $5.0 million in 2019 and 2018, respectively.

Operating expenses
Operating expenses were comparable with the prior year.

Financial Condition, Liquidity and Capital Resources

Sources and Uses of Cash: Our principal sources of liquidity are our cash and cash equivalents, cash generated from operations, proceeds available under our revolving line of credit, and proceeds from dispositions.

As of December 31, 2020 our cash and cash equivalents totaled $195.4 million and the availability under our revolving line of credit was $75.0 million, for total available liquidity of $270.4 million.

Operating activities from continuing operations generated approximately $53.4 million in 2020, representing an increase of $11.0 million compared with 2019, driven by Broadband subscriber growth.

Operating activities from discontinued operations generated $249.5 million as compared to $216.8 million in 2019 driven by a $24.0 million increase due to the resolution of our travel revenue dispute with Sprint and $7.5 million lower advertising expense.

Net cash used in investing activities for continuing operations increased $44.4 million in 2020, compared with 2019 due to the following:

- $53.4 million increase in capital expenditures due primarily to higher spending in the Broadband segment primarily driven by our Glo Fiber market expansion.
- $8.1 million decline in acquisitions.
- Net cash used in investing activities for discontinued operations decreased $54.2 million to $17.5 million during 2020, due to completion of the nTelos and Parkersburg network expansions in the first half of 2019 and postponement of Richmond Sliver territory expansion projects in contemplation of the pending sale of our Wireless operations.

Net cash used in financing activities for continuing operations during 2020 decreased approximately $4.6 million compared with 2019, driven by a $7.2 million decline in share repurchases, partially offset by a $2.5 million increase in dividends paid as our annual dividend increased from $0.29 per share in 2019 to $0.34 per share in 2020.

Net cash used in financing activities for discontinued operations during 2020 decreased $19.1 million primarily due to lower principal payments on our term loans.

Indebtedness: As of December 31, 2020, the Company’s indebtedness totaled approximately $698 million, with an annualized overall weighted average interest rate of approximately 2.3%. As of December 31, 2020, we were in compliance with the financial covenants in our Credit Facility agreement.

Disposition of Wireless: Shentel currently expects that the after-tax proceeds from the sale of Shentel Wireless will be approximately $1.5 billion. The transaction will be accounted for as an asset sale for income tax purposes. Cash proceeds from the sale are required to be used to immediately repay our outstanding indebtedness. Principal payments on our debt are thus presented as cash used to finance our discontinued operations. The Company currently expects to use the after-tax proceeds from the sale of Shentel Wireless to, among other things:

- Repay and terminate approximately $702 million of outstanding term loans under our credit agreement, and associated interest rate swap liabilities, concurrent with the closing of the disposition;
- Issue a Special Dividend of $18.75 per share to Shentel’s shareholders;
- Provide adequate liquidity for growth and potential strategic acquisitions; and
- Provide liquidity for general corporate purposes.

The Company expects to pay the Special Dividend in the second quarter 2021 after the close of the Shentel Wireless transaction, subject to the approval of Shentel’s Board of Directors.

Following the disposition of Wireless and concurrent repayment of our outstanding term loans, we expect to secure a new credit facility, to assist in funding our strategic initiatives and future growth.

We expect our cash on hand, proceeds received from dispositions, and cash flow from continuing operations will be sufficient to meet our anticipated liquidity needs for business operations for the next twelve months. There can be no assurance that we will continue to generate cash flows at or above current levels or that we will be able to raise additional financing to support the Company's planned capital expenditures.

We expect our capital expenditures to exceed the cash flow provided from continuing operations through 2023, as we expand our Glo Fiber and Beam broadband services into new markets.

The actual amount and timing of our future capital requirements may differ materially from our estimate depending on the demand for our products and services, the outcome of the sale of our discontinued wireless operations to T-Mobile, new market developments and expansion opportunities.

Our proceeds from dispositions and cash flows from continuing operations could be adversely affected by events outside our control, including, without limitation, changes in overall economic conditions, regulatory requirements, changes in technologies, demand for our products and services, availability of labor resources and capital, natural disasters, pandemics and outbreaks of contagious diseases and other adverse public health developments, such as COVID-19, and other conditions. Our ability to attract and maintain a sufficient customer base, particularly in our Broadband markets, is critical to our ability to maintain a positive cash flow from operations. The foregoing events individually or collectively could affect our results.

Critical Accounting Policies

We prepare our consolidated financial statements in accordance with U.S. generally accepted accounting principles ("GAAP"). The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect our reported amounts of assets, liabilities, revenue and expenses, as well as related disclosures. To the extent that there are material differences between these estimates and actual results, our financial condition or operating results would be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. We refer to accounting estimates of this type as critical accounting policies and estimates, which we discuss further below.

Our significant accounting policies are described in Note 2, *Summary of Significant Accounting Policies* in our consolidated financial statements. The following are the accounting policies that we believe involve a greater degree of judgment and complexity and are the most critical to aid in fully understanding and evaluating our consolidated financial condition and results of operations.

Revenue Recognition

Our Broadband segment provides broadband data, video and voice services to residential and commercial customers in portions of Virginia, West Virginia, Maryland, Pennsylvania, and Kentucky, via fiber optic, hybrid fiber coaxial cable, and fixed wireless networks. The Broadband segment also provides voice and DSL telephone services to customers in Virginia's Shenandoah County and portions of adjacent counties as a Rural Local Exchange Carrier ("RLEC"). Our service contracts are generally cancellable at the customer's discretion without penalty at any time. We allocate the total transaction price in these transactions based upon the standalone selling price of each distinct good or service. We generally recognize these revenues over time as customers simultaneously receive and consume the benefits of the service, with the exception of equipment sales and home wiring, which are recognized as revenue at a point in time when control transfers and when installation is complete, respectively. Installation fees, charged upfront without transfer of commensurate goods or services to the customer, are allocated to services and are recognized ratably over the longer of the contract term or the period in which the unrecognized fee remains material to the contract, which we estimate to be about one year. Additionally, the Company incurs commission and installation costs related to in-house and third-party vendors which are capitalized and amortized over the expected weighted average customer life which is approximately five years.

Our Broadband segment also provides Ethernet and Wavelength fiber optic services to enterprise and carrier customers under capacity agreements, and the related revenue is recognized over time. In some cases, non-refundable upfront fees are charged for connecting enterprise or carrier customers to our fiber network. Those amounts are recognized ratably over the longer of the contract term or the period in which the unrecognized fee remains material to the respective contract.

The Broadband segment also leases dedicated fiber optic strands to customers as part of "dark fiber" agreements, which are accounted for as leases under ASC 842 *Leases*.

Our Tower segment leases space on owned cell towers to our Wireless and Broadband segments, and to other wireless carriers. Revenue from these leases is accounted for under ASC 842.

Recently Issued Accounting Standards

Recently issued accounting standards and their expected impact, if any, are discussed in Note 2, *Summary of Significant Accounting Policies* in our consolidated financial statements.

ITEM 7A. **QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

As of December 31, 2020, the Company had $697.9 million of gross variable rate debt outstanding, (i.e. outstanding principal on term loans A-1 and A-2), bearing interest at a weighted average rate of 2.3%. An increase in market interest rates of 1.00% would add approximately $6.9 million to annual interest expense, excluding the effect of our interest rate swaps. The swaps cover notional principal equal to $289.4 million, or approximately 41.5% as of December 31, 2020. The Company is required to pay a combined fixed rate of approximately 1.16% and receive a variable rate based on one month LIBOR (0.15% at December 31, 2020), to manage a portion of its interest rate risk. Changes in the net interest paid or received under the swaps would offset a corresponding portion of the change in interest expense on the variable rate debt outstanding.

ITEM 8. **FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

Our consolidated financial statements and supplementary data are included as a separate section included within Item 15 of this Annual Report on Form 10-K commencing on page F-1 and are incorporated herein by reference.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our Chief Executive Officer, Chief Financial Officer, and Chief Accounting Officer (the certifying officers) have conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)) as of December 31, 2020. Our certifying officers concluded that, as a result of the material weaknesses in internal control over financial reporting as described below, our disclosure controls and procedures were not effective as of December 31, 2020.

Per Rules 13a-15(e) and 15d-15(e), the term disclosure controls and procedures means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act (15 U.S.C. 78a et seq.) is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer's management, including its Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

In light of the material weaknesses described below, management performed additional analysis and other procedures to ensure that our consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles (GAAP). Accordingly, management believes that the consolidated financial statements included in this Annual Report on Form 10-K fairly present, in all material respects, our financial position, results of operations, and cash flows as of and for the periods presented, in accordance with U.S. GAAP.

Changes in Internal Control over Financial Reporting

As disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, the Company is pursuing a phased approach to remediate its material weaknesses, and management believes that a remediation effort of this magnitude will most likely extend over multiple years. We implemented the following changes and improvements during 2020, including in the fourth quarter, under this phased approach:

- We added resources with skills and expertise in technical accounting and internal control over financial reporting to establish a resource complement that is commensurate with our baseline accounting, reporting, and information technology maintenance requirements.
- We successfully executed our remediation strategy on the treasury process, which includes cash, debt, interest expense, derivatives, and benefit obligations.
- We made significant progress towards remediation of the property, plant, and equipment and depreciation expense process, including:
    - Completion of risk assessment procedures and initiation of control design activities over property, plant, and equipment and depreciation expense.
    - Implementation of a redesigned process and various software tools to account for projects under construction. We have designed and are implementing internal controls over this new process.

When the sale of our Wireless segment became probable late in the third quarter of 2020, we began to revise our risk assessment process and recalibrate ongoing control activities in relation to our smaller continuing operations. The significant and incremental effort required by this recalibration, potential strategic transactions, and a volume of ongoing software development projects have led us to conclude that it is no longer feasible to complete our remediation plan by the end of 2021, as we had previously targeted. Further, we need to complete scheduled updates to our enterprise resourcing planning (ERP) system over the next two years, which also places significant demands on our available resources. While we have established a resource complement that is commensurate with our baseline accounting, reporting, and information technology maintenance requirements, such resource complement is not adequate to absorb the significant and incremental effort associated with these efforts while simultaneously continuing our phased remediation approach. Accordingly, we will prioritize the recalibration of controls over our continuing operations and our ERP upgrade as we continue our phased remediation approach.

As a result of the changes described above, management identified various immaterial errors, some of which were corrected during 2020. Other than the changes and improvements that occurred in the fourth quarter, which are included among the items discussed above, there have been no other changes in the Company's internal control over financial reporting that occurred during the quarter ended December 31, 2020 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act). 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.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

In order to evaluate the effectiveness of internal control over financial reporting, under the direction of our certifying officers, we conducted an assessment using the criteria established in Internal Control - Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on this assessment, our certifying officers concluded that the Company's internal control over financial reporting was not effective as of December 31, 2020 due to a material weakness in our control environment whereby the Company did not have a sufficient number of trained resources with expertise in technical accounting, internal control over financial reporting, and the design and implementation of information technology solutions to complete its remediation efforts.

As a result, we were unable to maintain effective information and communication processes, and did not have effective process-level control activities over the following areas:

- Property, plant, and equipment and depreciation expense
- Purchasing (current liabilities and operating expenses)

The control deficiencies described above created a reasonable possibility that a material misstatement to the consolidated financial statements would not be prevented or detected on a timely basis and therefore we concluded that the deficiencies represent material weaknesses in the Company's internal control over financial reporting and our internal control over financial reporting was not effective as of December 31, 2020.

Our independent registered public accounting firm, KPMG LLP, who audited the consolidated financial statements included in this Annual Report on Form 10-K, issued an adverse opinion on the effectiveness of the Company's internal control over financial reporting. KPMG LLP's report appears on page F-3 of this Annual Report on Form 10-K.

Management's Remediation Plan

The Company is committed to making further progress in its remediation efforts during 2021. The following steps will continue to be executed until remediation of the material weaknesses is achieved:

- Retain and train individuals with the appropriate skills and experience related to technical accounting, internal control over financial reporting, and the design and implementation of information technology solutions. Monitor and adjust resourcing as further assessments are completed.
- Enhance information and communication processes through information technology solutions to ensure that information needed for financial reporting is accurate, complete, relevant and reliable, and communicated in a timely manner.
- Strengthen project management over the design and implementation of information technology solutions to improve throughput.
- Extend the successful implementation of our phased approach to remediation of control activities over property, plant, and equipment and depreciation expense and purchasing.
- Report regularly to the audit committee on the progress and results of the remediation plan, including the identification, status, and resolution of internal control deficiencies.

ITEM 9B. **OTHER INFORMATION**

None

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

See “Executive Officers of the Registrant” in Part 1, Item 1 of this report for information about our executive officers, which is incorporated by reference in this Item 10. Other information required by this Item 10 is incorporated by reference to the Company's definitive proxy statement for its 2021 Annual Meeting of Shareholders, referred to as the “2021 proxy statement,” which we will file with the SEC on or before 120 days after our 2020 fiscal year end, and which appears in the 2021 proxy statement under the captions “Election of Directors” and “Section 16(a) Beneficial Ownership Reporting Compliance.”

We have adopted a code of ethics applicable to our chief executive officer and all senior financial officers, who include our principal financial officer, principal accounting officer, and persons performing similar functions. The code of ethics, which is part of our Code of Business Conduct and Ethics, is available on our website at *www.shentel.com*. To the extent required by SEC rules, we intend to disclose any amendments to our code of conduct and ethics, and any waiver of a provision of the code with respect to the Company’s directors, principal executive officer, principal financial officer, principal accounting officer, or persons performing similar functions, on our website referred to above within four business days following such amendment or waiver, or within any other period that may be required under SEC rules from time to time.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this Item 11 is incorporated herein by reference to the 2021 proxy statement, including the information in the 2021 proxy statement appearing under the captions “Election of Directors-Director Compensation” and “Executive Compensation.”

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information required by Item 12 is incorporated herein by reference to the 2021 proxy statement appearing under the caption “Security Ownership.”

The Company awards stock options to its employees meeting certain eligibility requirements under two shareholder-approved Company Stock Incentive Plans, referred to as the 2005 Stock Incentive Plan and 2014 Equity Incentive Plan. The 2014 Equity Incentive Plan authorizes grants of up to an addition 3.0 million shares over a ten-year period beginning in 2014. As a result of the adoption of the 2014 Equity Incentive Plan, additional grants will not be made under the 2005 Stock Incentive Plan, but outstanding awards will continue to vest and options may continue to be exercised. Outstanding options and the number of shares available for future issuance as of December 31, 2020 were as follows:

	Number of securities to be issued upon exercise of outstanding options	Weighted average exercise price of outstanding options	Number of securities remaining available for future issuance
2005 Stock Incentive Plan	14,874	$ 6.64	—
2014 Equity Incentive Plan	6,864	$ 31.05	1,959,519

ITEM 13. CERTAIN RELATIONSHIPS, RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

Information required by Item 13 is incorporated herein by reference to the 2021 proxy statement, including the information in the 2021 proxy statement appearing under the caption “Executive Compensation-Certain Relationships and Related Transactions.”

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information required by Item 14 is incorporated herein by reference to the 2021 proxy statement, including the information in the 2021 proxy statement appearing under the caption “Shareholder Ratification of Independent Registered Public Accounting Firm.”

PART IV

ITEM 15. **EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

The following is a list of documents filed as a part of this report:

(1) Financial Statements
(2) Financial Statement Schedule
(3) Exhibits

The exhibits required to be filed by Item 601 of Regulation S-K are listed in the Exhibit Index directly following Item 16. Form 10-K Summary, within this Annual Report on Form 10-K.

SHENANDOAH TELECOMMUNICATIONS COMPANY
AND SUBSIDIARIES

Index to the Consolidated 2020 Financial Statements

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Shenandoah Telecommunications Company:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Shenandoah Telecommunications Company and subsidiaries (the Company) as of December 31, 2020 and 2019, the related consolidated statements of comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – Valuation and Qualifying Accounts (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 adverse opinion on the effectiveness of the Company's internal control over financial reporting.

Changes in Accounting Principles

As discussed in Note 2 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 Update 2016-02, Leases (Topic 842), and all related amendments.

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 Matter

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

Determination of costs capitalized into property, plant, and equipment

As discussed in Notes 2, 3, and 6 to the consolidated financial statements, the property, plant, and equipment, net balance (including property, plant, and equipment held for sale) as of December 31, 2020 was $740.1 million. The determination to capitalize, rather than expense, costs increases operating income and net income.

We identified the determination of costs capitalized into property, plant, and equipment as a critical audit matter. The nature of evidence provided, such as third-party invoices, can lack specificity of the item acquired or activity performed and required complex judgment to determine that the costs qualified for capitalization.

The following are the primary procedures we performed to address this critical audit matter. For a sample of costs capitalized, we inspected the related invoice(s). For those invoices lacking specificity, we inspected additional support, such as project documentation or contracts. In certain instances, we also involved a professional with specialized skills and knowledge in the telecommunications industry, who assisted in evaluating the nature of the project and related costs. The combination of these procedures was used to independently assess the Company's determination that such costs qualified for capitalization.

/s/ KPMG LLP

We have served as the Company's auditor since 2001.

McLean, Virginia
February 25, 2021

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors
Shenandoah Telecommunications Company:

Opinion on Internal Control Over Financial Reporting

We have audited Shenandoah Telecommunications Company 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, because of the effect of the material weaknesses, described below, on the achievement of the objectives of the control criteria, the Company has not maintained 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 comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – Valuation and Qualifying Accounts (collectively, the consolidated financial statements), and our report dated February 25, 2021 expressed an unqualified opinion on those consolidated financial statements.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weaknesses have been identified and included in management's assessment:

The Company's control environment was not effective, because the Company did not have a sufficient number of trained resources with expertise in technical accounting, internal control over financial reporting, and the design and implementation of information technology solutions to complete its remediation efforts. As a result, the Company was unable to maintain an effective information and communication process, and did not have effective process-level control activities over the following areas:

- Property, plant, and equipment and depreciation expense
- Purchasing (current liabilities and operating expenses)

The material weaknesses were considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2020 consolidated financial statements, and this report does not affect our report 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

McLean, Virginia
February 25, 2021

SHENANDOAH TELECOMMUNICATIONS COMPANY AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
December 31, 2020 and 2019

(in thousands)	**2020**	**2019**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 195,397	$ 101,651
Accounts receivable, net of allowance for doubtful accounts of $614 and $533, respectively	70,393	63,641
Income taxes receivable	—	10,306
Prepaid expenses and other	9,631	11,178
Current assets held for sale	1,133,294	55,077
Total current assets	1,408,715	241,853
Investments	13,769	12,388
Property, plant and equipment, net	440,427	363,087
Goodwill and Intangible assets, net	106,759	88,241
Operating lease right-of-use assets	50,387	42,568
Deferred charges and other assets	11,650	9,267
Non-current assets held for sale	—	1,141,498
Total assets	2,031,707	1,898,902
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Current maturities of long-term debt, net of unamortized loan fees	$ 688,463	$ 31,650
Accounts payable	19,599	40,295
Advanced billings and customer deposits	8,594	8,358
Accrued compensation	16,413	10,075
Income taxes payable	6,951	—
Current operating lease liabilities	1,970	1,731
Accrued liabilities and other	13,869	7,556
Current liabilities held for sale	452,202	53,912
Total current liabilities	1,208,061	153,577
Long-term debt, less current maturities, net of unamortized loan fees	—	688,464
Other long-term liabilities:		
Deferred income taxes	150,652	137,567
Asset retirement obligations	4,955	6,152
Benefit plan obligations	14,645	12,675
Non-current operating lease liabilities	46,095	42,625
Other liabilities	24,905	16,991
Non-current liabilities held for sale	—	368,423
Total other long-term liabilities	241,252	584,433
Commitments and contingencies (Note 14)		
Shareholders' equity:		
Common stock, no par value, authorized 96,000; 49,868 and 49,671 issued and outstanding at December 31, 2020 and 2019, respectively	—	—
Additional paid in capital	47,317	42,110
Retained earnings	539,783	430,010
Accumulated other comprehensive (loss) income, net of taxes	(4,706)	308
Total shareholders' equity	582,394	472,428
Total liabilities and shareholders' equity	$ 2,031,707	$ 1,898,902

See accompanying notes to consolidated financial statements.

SHENANDOAH TELECOMMUNICATIONS COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
Years Ended December 31, 2020, 2019 and 2018

(in thousands, except per share amounts)	**2020**	**2019**	**2018**
Service revenue and other	$ 220,775	$ 206,862	$ 192,683
Operating expenses:			
Cost of services	88,203	82,949	80,418
Selling, general and administrative	85,016	77,846	70,844
Depreciation and amortization	48,703	46,786	44,390
Total operating expenses	221,922	207,581	195,652
Operating loss	(1,147)	(719)	(2,969)
Other income:			
Other income, net	3,187	3,280	3,703
Income before income taxes	2,040	2,561	734
Income tax (benefit) expense	(586)	173	(1,343)
Income from continuing operations	2,626	2,388	2,077
Income from discontinued operations, net of tax	124,097	53,568	44,518
Net income	126,723	55,956	46,595
Other comprehensive income:			
Unrealized (loss) income on interest rate hedge, net of tax	(5,014)	(7,972)	50
Comprehensive income	$ 121,709	$ 47,984	$ 46,645
Net income per share, basic and diluted:			
Basic - Income from continuing operations	$ 0.05	$ 0.05	$ 0.04
Basic - Income from discontinued operations, net of tax	$ 2.49	$ 1.07	$ 0.90
Basic net income per share	$ 2.54	$ 1.12	$ 0.94
Diluted - Income from continuing operations	$ 0.05	$ 0.05	$ 0.04
Diluted - Income from discontinued operations, net of tax	$ 2.48	$ 1.07	$ 0.89
Diluted net income per share	$ 2.53	$ 1.12	$ 0.93
Weighted average shares outstanding, basic	49,901	49,811	49,542
Weighted average shares outstanding, diluted	50,024	50,101	50,063
Cash dividend declared per share	$ 0.34	$ 0.29	$ 0.27

See accompanying notes to consolidated financial statements.

SHENANDOAH TELECOMMUNICATIONS COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
Years Ended December 31, 2020, 2019 and 2018
(in thousands, except per share amounts)

	Shares of Common Stock (no par value)	Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total
Balance, December 31, 2017	49,328	$ 44,787	$ 299,190	$ 8,230	$ 352,207
Net income	—	—	46,595	—	46,595
Change in accounting principle - adoption of accounting standard	—	—	56,097	—	56,097
Other comprehensive gain, net of tax	—	—	—	50	50
Dividends declared ($0.27 per share)	—	—	(13,386)	—	(13,386)
Dividends reinvested in common stock	11	520	—	—	520
Stock based compensation	206	5,367	—	—	5,367
Stock options exercised	113	787	—	—	787
Common stock issued	1	26	—	—	26
Shares retired for settlement of employee taxes upon issuance of vested equity awards	(105)	(4,031)	—	—	(4,031)
Common stock issued to acquire non-controlling interest in nTelos	76	—	—	—	—
Balance, December 31, 2018	49,630	47,456	388,496	8,280	444,232
Net income	—	—	55,956	—	55,956
Other comprehensive loss, net of tax	—	—	—	(7,972)	(7,972)
Dividends declared ($0.29 per share)	—	—	(14,442)	—	(14,442)
Dividends reinvested in common stock	14	499	—	—	499
Share repurchases	(200)	(7,231)	—	—	(7,231)
Stock based compensation	184	4,182	—	—	4,182
Stock options exercised	29	81	—	—	81
Common stock issued	—	34	—	—	34
Shares retired for settlement of employee taxes upon issuance of vested equity awards	(62)	(2,911)	—	—	(2,911)
Common stock issued to acquire non-controlling interest in nTelos	76	—	—	—	—
Balance, December 31, 2019	49,671	42,110	430,010	308	472,428
Net income	—	—	126,723	—	126,723
Other comprehensive gain (loss), net of tax	—	—	—	(5,014)	(5,014)
Dividends declared ($0.34 per share)	—	—	(16,950)	—	(16,950)
Dividends reinvested in common stock	—	(2)	—	—	(2)
Stock based compensation	156	6,833	—	—	6,833
Stock options exercised	—	36	—	—	36
Common stock issued	1	31	—	—	31
Annual dividend reinvestment	12	526		—	526
Shares retired for settlement of employee taxes upon issuance of vested equity awards	(48)	(2,217)	—	—	(2,217)
Common stock issued to acquire non-controlling interest in nTelos	76	—	—	—	—
Balance, December 31, 2020	49,868	$ 47,317	$ 539,783	$ (4,706)	$ 582,394

See accompanying notes to consolidated financial statements.

SHENANDOAH TELECOMMUNICATIONS COMPANY AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
Years Ended December 31, 2020, 2019 and 2018

(in thousands)	2020	2019	2018
Cash flows from operating activities:			
Net income	$ 126,723	$ 55,956	$ 46,595
Income from discontinued operations, net of tax	124,097	53,568	44,518
Income from continuing operations	2,626	2,388	2,077
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation	47,964	46,313	44,213
Amortization	739	473	176
Accretion of asset retirement obligations	333	410	319
Bad debt expense	1,220	1,743	1,983
Stock based compensation expense, net of amount capitalized	5,907	3,367	4,745
Deferred income taxes	15,310	16,848	3,857
Gain from patronage and investments	(1,311)	(4,769)	(3,112)
Changes in assets and liabilities:			
Accounts receivable	(7,318)	(74)	8
Current income taxes	(15,896)	(16,675)	(5,200)
Operating lease right-of-use assets	3,980	7,593	—
Other assets	(3,959)	162	(6,576)
Accounts payable	(663)	(8,426)	12,203
Lease liabilities	(3,067)	(4,987)	—
Other deferrals and accruals	7,494	(2,037)	(494)
Net cash provided by operating activities - continuing operations	53,359	42,329	54,199
Net cash provided by operating activities - discontinued operations	249,508	216,816	211,448
Net cash provided by operating activities	302,867	259,145	265,647
Cash flows from investing activities:			
Capital expenditures	(120,450)	(67,048)	(56,631)
Cash disbursed for acquisitions	(1,890)	(10,000)	—
Cash disbursed for deposit on FCC spectrum leases	(16,118)	(16,742)	—
Proceeds from sale of assets and other	370	112	541
Net cash used in investing activities - continuing operations	(138,088)	(93,678)	(56,090)
Net cash used in investing activities - discontinued operations	(17,500)	(71,656)	(131,710)
Net cash used in investing activities	(155,588)	(165,334)	(187,800)
Cash flows from financing activities:			
Dividends paid, net of dividends reinvested	(16,424)	(13,943)	(12,863)
Share repurchases	—	(7,231)	—
Taxes paid for equity award issuances	(2,217)	(2,910)	(3,245)
Payments for financing arrangements and other	(769)	36	(2)
Net cash used in financing activities - continuing operations	(19,410)	(24,048)	(16,110)
Net cash used in financing activities - discontinued operations	(34,123)	(53,198)	(55,236)
Net cash used in financing activities	(53,533)	(77,246)	(71,346)
Net increase in cash and cash equivalents	93,746	16,565	6,501
Cash and cash equivalents, beginning of period	101,651	85,086	78,585
Cash and cash equivalents, end of period	$ 195,397	$ 101,651	$ 85,086

See accompanying notes to consolidated financial statements.

SHENANDOAH TELECOMMUNICATIONS COMPANY AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Nature of Operations

Shenandoah Telecommunications Company and its subsidiaries (collectively, the "Company") provide broadband data, video and voice services to residential and commercial customers in portions of Virginia, West Virginia, Maryland, Pennsylvania and Kentucky, via fiber optic, hybrid fiber coaxial cable, and fixed wireless networks. We also lease dark fiber and provide Ethernet and Wavelength fiber optic services to enterprise and wholesale customers throughout the entirety of our service area. The Broadband segment also provides voice and DSL telephone services to customers in Virginia's Shenandoah County and portions of adjacent counties as a Rural Local Exchange Carrier ("RLEC"). These integrated networks are connected by a fiber network. All of these operations are contained within our Broadband reporting segment.

Our Tower segment owns 223 cell towers and leases colocation space on those towers to wireless communications providers, including our discontinued wireless operation, refer to Note 3, *Discontinued Operations*, and Note 15, *Segment Reporting*, for additional information.

Revision of Prior Period Financial Statements

In connection with the preparation of our unaudited condensed consolidated financial statements for the three months ended March 31, 2020, we determined that certain errors existed in our previously issued financial statements. Specifically:

- Prepaid and other assets, a component of current assets held for sale, as of December 31, 2019, were understated by $2.7 million, deferred tax liabilities were understated by $0.7 million, and retained earnings were understated by $2.0 million as the result of a failure to properly account for handsets that were utilized as demo phones in certain wireless retail stores within our area of operation. All of the impact to retained earnings is attributable to 2017 and prior years.
- Property, plant and equipment, net, classified as held for sale, and deferred income tax liabilities, as of December 31, 2019 were understated by $1.4 million and $0.4 million, respectively. Depreciation, contained within discontinued operations, was overstated by $1.4 million for the year and quarter ended December 31, 2019. Income tax expense and net income were understated by $0.4 million and $1.0 million, respectively, for the year and quarter ended December 31, 2019.

We evaluated these errors under the U.S. Securities and Exchange Commission's ("SEC's") authoritative guidance on materiality and the quantification of the effect of prior period misstatements on financial statements, and we have determined that the impact of these errors on our prior period consolidated financial statements is immaterial. However, since the correction of these errors in the first quarter of 2020 could have become material to our results of operations for the year ending December 31, 2020, we revised our prior period financial statements to correct these errors herein. For the year and quarter ended December 31, 2019, the correction of these errors resulted in a $0.02 increase in both basic and diluted earnings per share from discontinued operations.

Note 2. Summary of Significant Accounting Policies

Principles of consolidation: The accompanying consolidated financial statements include the accounts of Shenandoah Telecommunications Company and all of its wholly owned subsidiaries. All intercompany accounts and transactions for continuing operations have been eliminated in consolidation.

Use of estimates: The preparation of financial statements in conformity with accounting principles generally accepted in the United States, or the U.S., requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Due to the inherent uncertainty involved in making estimates, actual results to be reported in future periods could differ from our estimates.

Cash and cash equivalents: Cash equivalents include all investments with an original maturity of three months or less. The Company places its temporary cash investments with high credit quality financial institutions. Generally, such investments are in excess of FDIC or SIPC insurance limits.

Property, plant and equipment: Property, plant and equipment is stated at cost less accumulated depreciation. The Company capitalizes all costs associated with the purchase, deployment and installation of property, plant and equipment, including interest costs and internal labor costs on major capital projects during the period of their construction. Maintenance expense is recognized as incurred when repairs are performed that do not extend the life of property, plant and equipment. Expenses for major renewals and improvements, which significantly extend the useful lives of existing property and equipment, are capitalized and depreciated. Depreciation is calculated on the straight-line method over the estimated useful lives of the assets. Leasehold improvements are depreciated over the lesser of their useful lives or respective lease terms. Land is not depreciated. Refer to Note 6, *Property, Plant and Equipment*, for additional information.

Indefinite-lived Intangible Assets: Goodwill represents the excess of acquisition costs over the fair value of tangible net assets and identifiable intangible assets of the businesses acquired. Cable franchise rights provide us with the non-exclusive right to provide video services in a specified area. Spectrum licenses are issued by the Federal Communications Commission ("FCC") and provide us with either an exclusive or priority access right to utilize designated radio frequency spectrum within specific geographic service areas to provide wireless communication services. While some cable franchises and spectrum licenses are issued for a fixed time (generally ten years and up to fifteen years, respectively), renewals have been granted routinely and at nominal costs. The Company believes it will be able to meet all requirements necessary to secure renewal of its cable franchise rights and spectrum licenses. Moreover, the Company has determined that there are currently no legal, regulatory, contractual, competitive, economic or other factors that limit the useful lives of our cable franchises or spectrum licenses and as a result, we account for cable franchise rights and spectrum licenses as indefinite-lived intangible assets.

Indefinite-lived intangible assets are not amortized, but rather, are subject to impairment testing annually, in the fourth quarter, or whenever events or changes in circumstances indicate that the carrying amount may not be fully recoverable. These assets are evaluated for impairment based on the identification of reporting units. Our reporting units align with our reporting segments. We evaluated our reporting units for impairment during the fourth quarter of 2020, 2019 and 2018, respectively, on the basis of qualitative factors. Our consideration of qualitative factors included but was not limited to macroeconomic conditions, industry and market conditions, company specific events, changes in circumstances, after tax cash flows and market capitalization trends. We concluded that there were no indicators that a reporting unit impairment was more likely than not during the years ended December 31, 2020, 2019, or 2018.

Long-lived Assets: Finite-lived intangible assets, property, plant, and equipment, and other long-lived assets are amortized or depreciated over their estimated useful lives, as summarized in the respective footnotes below. These assets are evaluated for impairment based on the identification of asset groups. Our asset groups align with our reporting segments. We evaluated our asset groups for impairment during the fourth quarter of 2020. We concluded that there were no indicators that an asset group impairment had been triggered during the years ended December 31, 2020, 2019, or 2018.

Advertising Costs: The Company expenses advertising costs and marketing production costs as incurred and includes such costs within selling, general and administrative expenses in the consolidated statements of operations. Advertising expense for the years ended December 31, 2020, 2019 and 2018 was $2.7 million, $3.5 million and $2.6 million, respectively.

Benefit Obligations: The Benefit obligations caption includes the following plans:

($ in thousands)	December 31, 2020	December 31, 2019
Pension Plan	$ 7,961	$ 6,824
Postretirement Plan	3,997	3,573
SERP Plan	2,687	2,278
Total	$ 14,645	$ 12,675

The pension plan is frozen and covers certain employees who were employed by nTelos prior to October 1, 2003. Benefits under the plan vested after five years of plan service and were based on years of service and an average of the five highest consecutive years of compensation subject to certain reductions if the employee elects to receive the benefit prior to age 65. This plan was amended on December 31, 2012, to freeze future benefit plan accruals for participants.

As of December 31, 2020 and 2019, the fair value of our Pension Plan assets were $27.0 million and $24.1 million, respectively. These investments are held in index funds, and are valued based on the net asset value per share. Our Pension Plan's projected benefit obligation was $34.9 million and $30.9 million, at December 31, 2020 and 2019, respectively. The Pension Plan liability was discounted at 2.41% and 3.16% at December 31, 2020 and 2019, respectively.

The postretirement benefit plan is a frozen, unfunded, defined benefit plan. It covers certain health care benefits for certain retirees who were employed by an acquiree and meet eligibility requirements. The postretirement plan liability was discounted at 2.32% and 3.12% at December 31, 2020 and 2019, respectively.

The service component of defined benefit plan expense is immaterial and is included in selling, general, and administrative expense. Following our adoption of ASU 2017-17, *Compensation—Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost,* on January 1, 2018, all other components of benefit plan expense are presented in Other income (expense) and our policy is to immediately recognize actuarial gains and losses into earnings.
The Supplemental Executive Retirement Plan ("SERP") is a benefit plan that provides deferred compensation to certain employees. The Company holds investments in a rabbi trust as a source of funding for future payments under the plan. The SERP's investments were designated as trading securities and will be liquidated and paid out to the participants upon retirement. The benefit obligation to participants is always equal to the value of the SERP assets under ASC 710 *Compensation.* Changes to the investments' fair value are presented in Other income (expense), while the reciprocal changes in the liability are presented in selling, general and administrative expense.

Share Repurchase Program: On November 4, 2019, our program to repurchase up to $80 million of common stock became effective and expired on the 2020 anniversary. During the fourth quarter of 2019, we repurchased 200,410 shares under the program at an average price of $36.08; there were no repurchases made during the year ended December 31, 2020. Our common shares have zero par value and our policy is to record the entire repurchase as a reduction of additional paid-in capital. Repurchased shares are canceled and revert to a status of "authorized and unissued" under Virginia law.

New Accounting Standards
The Company adopted ASU No. 2016-13, *Financial Instruments - Credit Losses ("ASC 326"): Measurement of Credit Losses on Financial Instruments*, as of January 1, 2020 using the modified retrospective transition method. ASC 326 requires the application of a current expected credit loss ("CECL") impairment model to financial assets measured at amortized cost including trade accounts receivable, net investments in leases, and certain off-balance-sheet credit exposures. Under the CECL model, lifetime expected credit losses on such financial assets are measured and recognized at each reporting date based on historical, current, and forecasted information. Furthermore, the CECL model requires financial assets with similar risk characteristics to be analyzed on a collective basis. There was no significant impact to consolidated financial statements upon adoption.

The Company adopted ASU No. 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software ("ASC 350"): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement that is a Service Contract,* as of January 1, 2020. This standard aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. Upon adoption of the standard, implementation costs were capitalized in the period incurred and will be amortized over the term of the hosting arrangement. There was no significant impact to consolidated financial statements upon adoption.

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.*" This accounting update provides optional accounting relief to entities with contracts, hedge accounting relationships or other transactions that reference London Interbank Offering Rate (LIBOR) or other interest rate benchmarks for which the referenced rate is expected to be discontinued or replaced. This optional relief generally allows for contract modifications solely related to the replacement of the reference rate to be accounted for as a continuation of the existing contract instead of as an extinguishment of the contract, and therefore would not require reassessment of a previous accounting determination. The Company's Credit Agreement and interest rate swaps have LIBOR as a reference rate. We plan to apply the accounting relief as relevant contract modifications are made to our Credit Agreement and interest rate swap contracts during the course of the reference rate reform transition period. The optional relief can be applied beginning January 1, 2020, and ending December 31, 2022.

We implemented Accounting Standards Codification ("ASC") 842-*Leases, ("ASC 842"),* on January 1, 2019 using the modified retrospective method and thus did not retroactively adjust prior periods. ASC 842 replaced previous leasing guidance with a comprehensive lease measurement and recognition standard and expanded disclosure requirements. The new standard required lessees to recognize most leases on their balance sheet as liabilities, along with the corresponding right-of-use, or ROU, assets. See Note 9, *Leases* for more information.

We adopted ASU No. 2018-02-*Income Statement - Reporting Comprehensive Income, ("ASC 220"),* as of January 1, 2019. We elected not to reclassify stranded income tax effects from accumulated other comprehensive income (OCI) to retained earnings. We utilize the portfolio approach as our policy to release the income tax effects from accumulated OCI as the entire portfolio is liquidated, sold, or extinguished.

Note 3. Discontinued Operations

On August 26, 2020, Sprint Corporation ("Sprint"), an indirect subsidiary of T-Mobile US, Inc., ("T-Mobile"), on behalf of and as the direct or indirect owner of Sprint PCS, delivered notice to the Company exercising its option to purchase the assets and operations of our Wireless operations for 90% of the “Entire Business Value” (as defined under our affiliate agreement and determined pursuant to the appraisal process set forth therein). Shortly thereafter, the Company committed to a plan to sell the discontinued Wireless operations.

The final and binding appraisal process was completed on February 1, 2021. Expected sale proceeds are $1.95 billion based upon the appraisal process and other agreements between the parties.

We expect to enter into a definitive asset purchase agreement with T-Mobile during the first quarter 2021 and expect that the transaction will close during the second quarter 2021, subject to customary closing conditions and required regulatory approvals.

The assets and liabilities that are expected to transfer in the sale are presented as held for sale within our Consolidated Balance Sheets. This disposal group excludes the accounts receivable and certain current liabilities generated by our Wireless operations because they are expected to be settled separately from the sale. Such accounts receivable totaled $51.7 million and $51.0 million at December 31, 2020 and December 31, 2019, respectively, and such current liabilities totaled $6.1 million and $27.7 million at December 31, 2020 and December 31, 2019, respectively. During the fourth quarter of 2020 and subsequent thereto, the parties agreed that our pension and postretirement plan liabilities due to certain current and former Wireless employees would not transfer in the sale. Our identification of assets and liabilities held for sale as of December 31, 2020 and 2019 has been updated accordingly, and could change again based on the terms of the final asset purchase agreement.

The transaction is structured as an asset sale for income tax purposes. As a result, no current or deferred tax assets or liabilities are included within the disposal group. While our long-term debt does not transfer in the sale, its provisions require us to repay all of the debt upon consummation of the sale. Our debt is therefore presented outside of the disposal group as a current liability at December 31, 2020. Our related interest rate swap liabilities are also presented outside of the disposal group as a current liability at December 31, 2020 because management intends to settle it at consummation.

The expected divestiture of our Wireless operations represents a strategic shift in the Company’s business and qualifies as a discontinued operation. Accordingly, the operating results and cash flows from our Wireless operations have been reflected as discontinued operations in our Consolidated Statements of Comprehensive Income and the Consolidated Statements of Cash Flows. Similarly, the results of our Wireless operations are no longer presented as a reporting segment. Because repayment of the debt is contractually triggered by the sale, the related interest expense is presented within discontinued operations under the relevant authoritative guidance. Consistent with the internal reporting provided to our chief operating decision maker, we previously allocated certain corporate management overhead costs to the former Wireless segment which may no longer be allocated to discontinued operations under the relevant authoritative guidance. Accordingly, we elected to recast our segment reporting note, to reflect the reattribution of these expenses in all presented periods in a manner that is also consistent with our updated internal reporting.

The carrying amounts of the major classes of assets and liabilities, which are classified as held for sale in the consolidated balance sheets, are as follows:

(in thousands)	December 31, 2020	December 31, 2019
ASSETS		
Inventory	$ 5,746	$ 5,728
Prepaid expenses and other	47,003	49,349
Property, plant and equipment, net	299,647	—
Intangible assets, net	176,459	—
Goodwill	146,383	—
Operating lease right-of-use assets	421,586	—
Deferred charges and other assets	36,470	—
Current assets held for sale	$ 1,133,294	$ 55,077
Property, plant and equipment, net	$ —	$ 338,427
Intangible assets, net	—	228,593
Goodwill	—	146,383
Operating lease right-of-use assets	—	384,010
Deferred charges and other assets	—	44,085
Non-current assets held for sale	$ —	$ 1,141,498
Total assets held for sale	$ 1,133,294	$ 1,196,575
LIABILITIES		
Current operating lease liabilities	$ 409,887	$ 47,077
Accrued liabilities and other	8,770	6,835
Asset retirement obligations	33,545	—
Current liabilities held for sale	$ 452,202	$ 53,912
Non-current operating lease liabilities	$ —	$ 337,661
Asset retirement obligations	—	30,762
Non-current liabilities held for sale	$ —	$ 368,423
Total liabilities held for sale	$ 452,202	$ 422,335

Income from discontinued operations, net of tax in the consolidated statements of comprehensive income consist of the following for the years ended December 31, 2020, 2019 and 2018:

(in thousands)			
Revenue:	**2020**	**2019**	**2018**
Service revenue and other	$ 401,035	$ 375,730	$ 382,948
Equipment revenue	41,338	67,659	67,510
Total revenue	442,373	443,389	450,458
Operating expenses:			
Cost of services	116,394	128,482	125,082
Cost of goods sold	40,642	65,148	63,583
Selling, general and administrative	34,011	39,128	43,563
Depreciation and amortization	62,930	111,467	122,014
Total operating expenses	253,977	344,225	354,242
Operating income	188,396	99,164	96,216
Other (expense) income:			
Interest expense	(20,455)	(29,286)	(34,838)
Income before income taxes	167,941	69,878	61,378
Income tax expense	43,844	16,310	16,860
Income from discontinued operations, net of tax	$ 124,097	$ 53,568	$ 44,518

Our Broadband and Tower segments recognize revenue for their respective provision of cell site backhaul service and leased colocation space to the discontinued Wireless operations. That revenue is earned under contracts executed at our estimate of fair market value, which will transfer upon consummation of the sale. Accordingly, we expect to have a level of continuing involvement with the discontinued operations via these pre-existing contractual arrangements. Revenue recognized within continuing operations pursuant to these agreements is disclosed in Note 15, *Segment Reporting*. Because the right to use space on our owned cell towers and the related lease liability will be transferred in the sale, they have been included in our disposal group under the relevant authoritative guidance. These right of use assets and lease liabilities were previously eliminated within our consolidated financial statements. Total assets and total liabilities as of December 31, 2019 therefore increased by $34 million as a result.

Under the relevant authoritative guidance, consummation of the sale will trigger or accelerate the recognition of certain expense related to contingent deal advisory fees, severance costs, recognition of our interest rate swap losses in net income, and loss on debt extinguishment. Our estimate of the related range of reasonably possible expense extends from $0 if the sale is not consummated to $35.9 million.

Note 4. Revenue from Contracts with Customers

Our Broadband segment provides broadband data, video and voice services to residential and commercial customers in portions of Virginia, West Virginia, Maryland, Pennsylvania and Kentucky, via fiber optic, hybrid fiber coaxial cable, and fixed wireless networks. The Broadband segment also provides voice and DSL telephone services to customers in Virginia's Shenandoah County and portions of adjacent counties as a Rural Local Exchange Carrier ("RLEC").

These contracts are generally cancellable at the customer's discretion without penalty at any time. We allocate the total transaction price in these transactions based upon the standalone selling price of each distinct good or service. We generally recognize these revenues over time as customers simultaneously receive and consume the benefits of the service, with the exception of equipment sales and home wiring, which are recognized as revenue at a point in time when control transfers and when installation is complete, respectively. Installation fees, charged upfront without transfer of commensurate goods or services to the customer, are allocated to services and are recognized ratably over the longer of the contract term or the period in which the unrecognized fee remains material to the contract, which we estimate to be about one year. Additionally, the Company incurs commission and installation costs related to in-house and third-party vendors which are capitalized and amortized over the expected weighted average customer life which is approximately five years.

Our Broadband segment also provides Ethernet and Wavelength fiber optic services to commercial fiber customers under capacity agreements, and the related revenue is recognized over time. In some cases, non-refundable upfront fees are charged for connecting commercial fiber customers to our fiber network. Those amounts are recognized ratably over the longer of the contract term or the period in which the unrecognized fee remains material to the respective contract. A related contract liability of $2.8 million was recognized at December 31, 2020, which we expect to recognize into revenue at the rate of approximately $0.8 million per year.

The Broadband segment also leases dedicated fiber optic strands to customers as part of "dark fiber" agreements, which are accounted for as leases under ASC 842.

Our Tower segment leases space on owned cell towers to our Wireless and Broadband segments, and to other wireless carriers. Revenue from these leases is accounted for under ASC 842.

Refer to Note 15, *Segment Reporting*, for a summary of these revenue streams.

Below is a summary of the Broadband segment's capitalized contract acquisition and fulfillment costs:

(in thousands)	2020	2019
Beginning Balance	$ 11,005	$ 10,091
Contract payments	8,154	6,518
Contract amortization	(4,490)	(5,604)
Ending Balance	$ 14,669	$ 11,005

Note 5. Investments

Investments consist of the following:

(in thousands)	December 31, 2020	December 31, 2019
SERP Investments at fair value	$ 2,687	$ 2,278
Cost method investments	10,536	9,497
Equity method investments	546	613
Total investments	$ 13,769	$ 12,388

SERP Investments at Fair Value: The Supplemental Executive Retirement Plan ("SERP") is a benefit plan that provides deferred compensation to certain employees. The Company holds the related investments in a rabbi trust as a source of funding for future payments under the plan. The SERP's investments were designated as trading securities and will be liquidated and paid out to the participants upon retirement. The benefit obligation to participants is always equal to the value of the SERP assets under ASC 710, *Compensation*. Changes to the investments' fair value are presented in Other income (expense), while the reciprocal changes in the liability are presented in selling, general and administrative expense.

Cost Method Investments: Our investment in CoBank's Class A common stock represented substantially all of our cost method investments with a balance of $9.8 million and $8.7 million at December 31, 2020 and 2019, respectively. We recognized approximately $4.2 million, $4.2 million and $2.8 million of patronage income in Other income (expense) in 2020, 2019 and 2018, respectively. Historically, approximately 75% of the patronage distributions were collected in cash and 25% in equity.

Equity Method Investments: At December 31, 2020, the Company had a 20.0% ownership interest in Valley Network Partnership ("ValleyNet"). The Company and ValleyNet purchase capacity on one another's fiber network. We recognized revenue of $0.9 million, $1.0 million, and $1.7 million from providing service to ValleyNet during 2020, 2019, and 2018, respectively. We recognized Cost of service of $2.7 million, $3.0 million, and $3.4 million for the use of ValleyNet's network during 2020, 2019, and 2018, respectively.

Note 6. Property, Plant and Equipment

Property, plant and equipment consisted of the following:

($ in thousands)	Estimated Useful Lives	December 31, 2020	December 31, 2019
Land		$ 3,909	$ 3,677
Land improvements	10 years	2,910	2,620
Buildings and structures	10 - 40 years	91,335	85,835
Cable and fiber	15 - 30 years	390,209	334,260
Equipment and software	4 - 8 years	331,047	278,873
Plant in service		819,410	705,265
Plant under construction		49,417	31,226
Total property, plant and equipment		868,827	736,491
Less: accumulated amortization and depreciation		428,400	373,404
Property, plant and equipment, net		$ 440,427	$ 363,087

Note 7. Goodwill and Intangible Assets

Other intangible assets consisted of the following:

	December 31, 2020			December 31, 2019		
(in thousands)	Gross Carrying Amount	Accumulated Amortization and Other	Net	Gross Carrying Amount	Accumulated Amortization and Other	Net
Goodwill - Broadband	$ 3,244	$ —	$ 3,244	$ 2,687	$ —	$ 2,687
Indefinite-lived intangibles:						
Cable franchise rights	$ 64,334	$ —	$ 64,334	$ 64,334	$ —	$ 64,334
FCC spectrum licenses	29,958	—	29,958	13,839	—	13,839
Railroad crossing rights	141	—	141	141	—	141
Total indefinite-lived intangibles	94,433	—	94,433	78,314	—	78,314
Finite-lived intangibles:						
FCC spectrum licenses	6,811	(340)	6,471	4,659	(97)	4,562
Subscriber relationships	28,425	(26,000)	2,425	28,065	(25,600)	2,465
Other intangibles	463	(277)	186	463	(250)	213
Total finite-lived intangibles	35,699	(26,617)	9,082	33,187	(25,947)	7,240
Total goodwill and intangible assets	$ 133,376	$ (26,617)	$ 106,759	$ 114,188	$ (25,947)	$ 88,241

We acquired Canaan Cable ("Canaan") on December 31, 2020. The $2.1 million acquisition price was allocated as follows: $1.1 million of property, plant and equipment; $0.4 million to subscriber relationships; and $0.6 million of goodwill. We remitted $1.89 million of the acquisition price at closing. The remaining $210 thousand was accrued and represents a non-cash investing and financing activity.

During the third quarter of 2020, the Company completed the purchase of certain indefinite-lived CBRS spectrum licenses for an aggregate cost of $16.1 million, within our Broadband segment. Spectrum licenses in the CBRS band are issued by the Federal Communications Commission (“FCC”) and provide us priority access rights over general access users other than incumbents, in that specific band, in accordance with the FCC’s three-tier CBRS band spectrum sharing framework to utilize designated radio frequency spectrum within specific geographic service areas to provide wireless communication services.

During the third quarter of 2019, the Company purchased certain indefinite-lived spectrum licenses for $13.8 million and finite-lived spectrum licenses for $4.7 million.

We acquired Big Sandy Broadband, Inc. ("Big Sandy") on February 28, 2019. The $10 million acquisition price was allocated as follows: $4.6 million of property, plant and equipment; $2.8 million of subscriber relationships; and $2.6 million of goodwill.

For the years ended December 31, 2020, 2019 and 2018, amortization expense was approximately $0.7 million, $0.5 million and $0.2 million, respectively.

Our finite-lived intangible assets are amortized over the following estimated useful lives:

	Estimated Useful Life
FCC spectrum licenses	18 - 30 years
Subscriber relationships	3 - 10 years
Other intangibles	15 - 20 years

The following table summarizes expected amortization of intangible assets at December 31, 2020:

(in thousands)		Amortization of Intangible Assets
2021	$	782
2022		782
2023		782
2024		782
2025		778
Thereafter		5,176
Total	$	9,082

Note 8. Other Assets and Accrued Liabilities

Prepaid expenses and other, classified as current assets, included the following:

(in thousands)		December 31, 2020		December 31, 2019
Prepaid maintenance expenses	$	4,018	$	3,065
Broadband contract acquisition and fulfillment costs		4,417		4,898
Interest rate swaps		—		1,382
Other		1,196		1,833
Prepaid expenses and other	$	9,631	$	11,178

Deferred charges and other assets, classified as long-term assets, included the following:

(in thousands)		December 31, 2020		December 31, 2019
Broadband contract acquisition and fulfillment costs	$	10,252	$	6,107
Prepaid expenses and other		1,398		1,908
Interest rate swaps		—		1,252
Deferred charges and other assets	$	11,650	$	9,267

Accrued liabilities and other, classified as current liabilities, included the following:

(in thousands)	December 31, 2020		December 31, 2019	
Interest rate swaps	$	4,048	$	—
Accrued programming costs		2,868		3,023
Sales and property taxes payable		1,072		919
Other current liabilities		5,881		3,614
Accrued liabilities and other	$	13,869	$	7,556

Other liabilities, classified as long-term liabilities, included the following:

(in thousands)	December 31, 2020		December 31, 2019	
Noncurrent portion of deferred lease revenue	$	18,687	$	12,449
FCC spectrum license obligations		3,845		1,699
Noncurrent portion of financing leases		1,492		1,591
Other		881		1,252
Other liabilities	$	24,905	$	16,991

Asset Retirement Obligations:

Our asset retirement obligations arise from certain of our leases and generally require us to remove our towers from ground leases. Below is a summary:

	Years Ended December 31,					
(in thousands)	2020		2019		2018	
Balance at beginning of year	$	6,152	$	8,808	$	4,619
Additional liabilities accrued		262		593		1,273
Changes to prior estimates		(1,633)		(3,659)		2,568
Payments		—		—		—
Accretion expense		332		410		348
Balance at end of year	$	5,113	$	6,152	$	8,808

Note 9. Leases

We adopted ASC 842 on January 1, 2019 using the modified retrospective method. We applied the package of practical expedients and, as a result, did not reassess prior conclusions regarding lease identification, lease classification and initial direct costs under the new standard. In those circumstances where the Company is the lessee, we elected to account for non-lease components associated with our leases (e.g., maintenance costs) and lease components as a single lease component for substantially all of our asset classes.

We lease various telecommunications sites, warehouses, retail stores, and office facilities for use in our business. These agreements include fixed rental payments as well as variable rental payments, such as those based on relevant inflation indices. The accounting lease term includes optional renewal periods that we are reasonably certain to exercise based on our assessment of relevant contractual and economic factors. The related lease payments are discounted at lease commencement using the Company's incremental borrowing rate in order to measure the lease liability and ROU asset.

The incremental borrowing rate is determined using a portfolio approach based on the rate of interest that the Company would have to pay to borrow an amount equal to the lease payments on a collateralized basis over a similar term. The Company uses the observable unsecured borrowing rate and risk-adjusts that rate to approximate a collateralized rate. At December 31, 2020, our operating leases had a weighted average remaining lease term of twenty-three years and a weighted average discount rate of

4.7%. Our finance leases had a weighted average remaining lease term of fourteen years and a weighted average discount rate of 5.2%.

During 2020, we recognized $6.6 million of operating lease expense and $0.6 million of interest and depreciation expense on finance leases. Operating lease expense is presented in cost of service or selling, general and administrative expense based on the use of the relevant facility. Variable lease payments and short-term lease expense were both immaterial. We remitted $4.4 million of operating lease payments during 2020. We also obtained $6.8 million of leased assets in exchange for new operating lease liabilities recognized during 2020.

The following table summarizes the expected maturity of lease liabilities at December 31, 2020:

(in thousands)	Operating Leases	Finance Leases	Total
2021	$ 4,046	$ 174	$ 4,220
2022	4,282	174	4,456
2023	3,826	174	4,000
2024	3,477	174	3,651
2025	3,250	174	3,424
2026 and thereafter	64,739	1,354	66,093
Total lease payments	83,620	2,224	85,844
Less: Interest	35,555	636	36,191
Present value of lease liabilities	$ 48,065	$ 1,588	$ 49,653

We recognized $9.1 million of operating lease revenue during 2020 related to the cell site colocation space and dedicated fiber optic strands that we lease to our customers, which is included in Service and other revenue in the consolidated statements of comprehensive income. Substantially all of our lease revenue relates to fixed lease payments.

Below is a summary of our minimum rental receipts under the lease agreements in place at December 31, 2020:

(in thousands)	Operating Leases
2021	$ 6,292
2022	5,236
2023	3,618
2024	2,410
2025	1,320
2026 and thereafter	3,805
Total	$ 22,681

Note 10. Debt

Our syndicated Credit Agreement includes a $75 million, five-year undrawn revolving credit facility, as well as the following term loans:

(in thousands)	December 31, 2020	December 31, 2019
Term loan A-1	$ 229,437	$ 258,571
Term loan A-2	468,481	473,469
	697,918	732,040
Less: unamortized loan fees	9,455	11,926
Total debt, net of unamortized loan fees	$ 688,463	$ 720,114

Term Loan A-1 bears interest at one-month LIBOR plus a margin of 1.50%, while Term Loan A-2 bears interest at one-month LIBOR plus a margin of 1.75%. LIBOR resets monthly. Our cash payments for interest were $18.6 million and $27.6 million during 2020 and 2019, respectively.

The Credit Agreement is fully secured by a pledge and unconditional guarantee from the Company and all of its subsidiaries, except Shenandoah Telephone Company. This provides the lenders a security interest in substantially all of the assets of the Company.

The Credit Agreement contains affirmative and negative covenants customary to secured credit facilities, including restrictions on our ability to incur additional indebtedness and additional liens on their assets, engage in mergers or acquisitions or dispose of assets, pay dividends or make other distributions, voluntarily prepay other indebtedness, enter into transactions with affiliated persons, make investments, and change the nature of the Company’s businesses. Total dividends, distributions, and redemptions of capital stock generally cannot exceed the sum of $25 million plus 60% of the Company's consolidated net income from January 1, 2016 to the date of declaration of such dividends, distributions or redemptions.

The financial covenants of the Credit Facility include:

- a limitation on the Company’s total leverage ratio, calculated as Consolidated EBITDA, as defined by the Credit Facility agreement, of less than or equal to 3.50 to 1.00 from December 31, 2018 through December 31, 2019, then 3.25 to 1.00 through December 31, 2021, and 3.00 to 1.00 thereafter;
- a minimum debt service coverage ratio, calculated as Consolidated EBITDA minus certain cash tax payments divided by the sum of all scheduled principal payments on the Credit Facility plus cash payments for interest, greater than or equal to 2.00 to 1.00;
- the Company must maintain a minimum liquidity balance, calculated as availability under the Revolver Facility plus unrestricted cash and cash equivalents, of greater than $25 million at all times.

As shown below, as of December 31, 2020, the Company was in compliance with the financial covenants in its credit agreements.

	Actual	Covenant Requirement
Total leverage ratio	2.0	3.25 or Lower
Debt service coverage ratio	6.6	2.0 or Higher
Minimum liquidity balance (in millions)	$ 270.4	$25.0 or Higher

Rate quotations provided by a group of banks that sustain LIBOR will no longer be required after 2021. As a result, it is uncertain whether LIBOR will continue to be quoted after 2021. Our term loans and interest rate swaps identify LIBOR as a reference rate and mature after 2021. Alternative reference rates that replace LIBOR may not yield the same or similar economic results over the terms of the financial instruments. The transition from LIBOR could result in us paying higher or lower interest rates on our current LIBOR-indexed term loans, affect the fair value of the derivative instruments we hold, or affect our ability to effectively use interest rate swaps to manage interest rate risk. Our Credit Agreement includes provisions that provide for the identification of a LIBOR replacement rate. Due to the uncertainty regarding the transition from LIBOR-indexed financial instruments, including when it will happen, and the manner in which an alternative reference rate will apply, we cannot yet reasonably estimate the expected financial impact of the LIBOR transition.

As discussed in Note 3, *Discontinued Operations*, the terms of our long term debt agreements require us to repay all of our debt upon consummation of the sale of our Wireless operations, which is expected to occur during the first half of 2021. Management also intends to settle the related interest rate swaps upon consummation. Both are therefore presented outside of the disposal group as a current liability at December 31, 2020.

Note 11. Derivatives and Hedging

The Company's interest rate swaps are pay-fixed (1.16%), receive-variable (one month LIBOR) that hedged approximately 41% of outstanding debt with outstanding notional amounts totaling $289.4 million and $339.8 million December 31, 2020 and 2019, respectively.

The fair value of these instruments was estimated using an income approach and observable market inputs. The hedge was determined to be highly effective and therefore all of the change in its fair value was recognized through other comprehensive income. Derivative balances are presented as follows in our consolidated balance sheet:

(in thousands)	December 31, 2020	December 31, 2019
Balance sheet location of derivative financial instruments:		
Prepaid expenses and other	$ —	$ 1,382
Deferred charges and other assets	—	1,252
Accrued liabilities and other	4,048	—
Total derivatives designated as hedging instruments	$ 4,048	$ 2,634

Market expectations of the projected LIBOR decreased significantly during 2020, which drove the fair value of our interest rate swaps to a liability.

The table below summarizes changes in accumulated other comprehensive income (loss) by component:

(in thousands)	Gains (Losses) on Cash Flow Hedges	Income Tax (Expense) Benefit	Accumulated Other Comprehensive Income (Loss), net of taxes
Balance as of December 31, 2019	$ 2,634	$ (2,326)	$ 308
Net change in unrealized (loss) gain	(8,444)	2,806	(5,638)
Amounts reclassified from accumulated other comprehensive income (loss) to interest expense	1,762	(1,138)	624
Net current period other comprehensive (loss) income	(6,682)	1,668	(5,014)
Balance as of December 31, 2020	$ (4,048)	$ (658)	$ (4,706)

As of December 31, 2020, the Company estimates that $3.2 million will be reclassified as a reduction of interest expense during the next twelve months.

Note 12. Income Taxes

The Company files a consolidated U.S. federal income tax return and various state income tax returns. The provision for the federal and state income taxes attributable to income (loss) consists of the following components:

	Years Ended December 31,		
(in thousands)	2020	2019	2018
Current (benefit) expense			
Federal taxes	$ (13,748)	$ (16,393)	$ (6,033)
State taxes	(2,148)	(282)	833
Total current provision	(15,896)	(16,675)	(5,200)
Deferred expense (benefit)			
Federal taxes	13,729	16,453	4,433
State taxes	1,581	395	(576)
Total deferred provision	15,310	16,848	3,857
Income tax (benefit) expense	$ (586)	$ 173	$ (1,343)
Effective tax rate	(28.7)%	6.8 %	(183.0)%

A reconciliation of income taxes determined by applying the federal and state tax rates to income (loss) is as follows:

	Years Ended December 31,		
(in thousands)	2020	2019	2018
Expected tax expense at federal statutory	$ 428	$ 538	$ 154
State income taxes, net of federal tax effect	54	15	(202)
Revaluation of U.S. deferred income taxes	—	—	(760)
Excess tax benefit from share based compensation and other, net	(1,068)	(380)	(535)
Income tax (benefit) expense	$ (586)	$ 173	$ (1,343)

The effective tax rate in 2020 decreased from 2019, primarily as a result of higher excess tax benefits from share based compensation.

The Company's cash payments for income taxes were $11.2 million in the year ended December 31, 2020. The Company received cash refunds for income taxes of $9.5 million in the year ended December 31, 2019.

Deferred tax assets and liabilities are measured using enacted tax rates that are expected to apply in the year of reversal or settlement and arise from temporary differences between the US GAAP and tax bases of the following assets and liabilities:

(in thousands)	December 31, 2020	December 31, 2019
Deferred tax assets:		
Leases	$ 123,129	$ 106,564
Asset retirement obligations	10,403	9,957
Net operating loss carry-forwards	7,723	10,071
Pension liabilities	3,868	3,161
Accruals and stock based compensation	3,093	1,935
Other	5,002	1,408
Total gross deferred tax assets	153,218	133,096
Less valuation allowance	—	—
Net deferred tax assets	153,218	133,096
Deferred tax liabilities:		
Property, plant and equipment	127,602	110,676
Leases	126,458	105,475
Intangible assets	25,722	27,201
Prepaid assets and other	24,088	27,311
Total gross deferred tax liabilities	303,870	270,663
Net deferred tax liabilities	$ 150,652	$ 137,567

In assessing the ability to realize deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon generating future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities, projected future taxable income, taxable income in prior carryback years if available and tax planning strategies in making this assessment. Based upon the level of historical taxable income and projections for future taxable income over the periods for which the deferred tax assets are deductible, the Company believes it more likely than not that the net deferred tax assets will be realized.

The Company has a deferred tax asset of $7.7 million related to federal and various state net operating losses. As of December 31, 2020, the Company had approximately $36.7 million of federal net operating losses expiring through 2027. The Company also had approximately $0.1 million of state net operating losses expiring through 2036.

As of December 31, 2020 and 2019, the Company had no unrecognized tax benefits.

The Company is not currently subject to state or federal income tax audits as of December 31, 2020. The Company's returns are generally open to examination from 2017 forward and the net operating losses acquired from nTelos are open to examination from 2002 forward.

Note 13. Earnings per Share & Stock Compensation

The Company maintains two shareholder-approved Company Stock Incentive Plans allowing for the grant of equity based incentive compensation to essentially all employees. The 2005 Plan authorized grants of up to 2,880,000 shares over a ten-year period beginning in 2005. The term of the 2005 Plan expired in February 2014; outstanding awards will continue to vest and options may continue to be exercised, but no additional awards will be granted under the 2005 Plan. The 2014 Plan authorizes grants of up to an additional 3,000,000 shares over a ten-year period beginning in 2014. Under these Plans, grants may take the form of stock awards, awards of options to acquire stock, stock appreciation rights, and other forms of equity based compensation; both options to acquire stock and stock awards were granted.

The Company granted approximately 96 thousand restricted stock units (RSUs) to employees and directors during 2020 at an average market price of $49.02. The Company also granted, approximately 40 thousand Relative Total Shareholder Return ("RTSR") awards to employees at an average value of $56.32 during 2020.

Restricted stock units generally have service requirements only or performance and service requirements with vesting periods ranging from one year for directors to four years for employees. RTSR awards vest over three years. The performance factor applied to the RTSR awards is based upon the Company's stock performance compared to a group of peer companies. The actual number of shares to be issued and can range from 0% to 150% of the awards granted.

The cost of employee services received in exchange for share-based awards classified as equity is measured using the estimated fair value of the award on the date of the grant, and the related expense is recorded using the straight-line method consistent with the recipient's respective service period.

Stock-based compensation expense was as follows:

	Years Ended December 31,		
(in thousands)	**2020**	**2019**	**2018**
Stock compensation expense	$ 6,227	$ 3,732	$ 5,153
Capitalized stock compensation	320	365	408
Stock compensation expense, net	$ 5,907	$ 3,367	$ 4,745

As of both December 31, 2020 and 2019, there was $3.7 million of total unrecognized compensation cost related to non-vested incentive awards that are expected to be recognized over a weighted average period of 2.6 years.

We utilize the treasury stock method to calculate the impact on diluted earnings per share that potentially dilutive stock-based compensation awards have. The following table indicates the computation of basic and diluted earnings per share:

	Years Ended December 31,		
(in thousands, except per share amounts)	2020	2019	2018
Calculation of net income per share:			
Income from continuing operations	$ 2,626	$ 2,388	$ 2,077
Income from discontinued operations, net of tax	$ 124,097	$ 53,568	$ 44,518
Net income	$ 126,723	$ 55,956	$ 46,595
Basic weighted average shares outstanding	49,901	49,811	49,542
Basic net income per share - continuing operations	$ 0.05	$ 0.05	$ 0.04
Basic net income per share - discontinued operations	$ 2.49	$ 1.07	$ 0.90
Basic net income per share	$ 2.54	$ 1.12	$ 0.94
Effect of stock-based compensation awards outstanding:			
Basic weighted average shares outstanding	49,901	49,811	49,542
Effect from dilutive shares and options outstanding	123	290	521
Diluted weighted average shares outstanding	50,024	50,101	50,063
Diluted net income per share - continuing operations	$ 0.05	$ 0.05	$ 0.04
Diluted net income per share - discontinued operations	$ 2.48	$ 1.07	$ 0.89
Diluted net income per share	$ 2.53	$ 1.12	$ 0.93

There were fewer than 110 thousand anti-dilutive awards outstanding during 2020, 2019, and 2018.

Note 14. Commitments and Contingencies

We are committed to make payments to satisfy our lease liabilities and long-term debt. The scheduled payments under those obligations are summarized in the respective notes above. We are also committed to make annual payments of approximately $108.0 thousand on our FCC spectrum license obligation through 2039.

The Company is subject to claims and legal actions that may arise in the ordinary course of business. The Company does not believe that any of these pending claims or legal actions are either probable or reasonably possible of a material loss.

Note 15. Segment Reporting

The expected divestiture of our Wireless operations represents a strategic shift in the Company's business and qualifies as a discontinued operation. As a result, the operating results and cash flows related to the Wireless segment have been reflected as discontinued operations in our Consolidated Statements of Comprehensive Income and the Consolidated Statements of Cash Flows.

Similarly, the results of our Wireless operations are no longer presented as a reporting segment. Consistent with the internal reporting provided to our chief operating decision maker, we previously allocated certain corporate management overhead costs to the former Wireless segment which may no longer be allocated to discontinued operations under the relevant authoritative guidance. Accordingly, we have recast our reporting of the remaining segments to reflect the reattribution of these expenses in all presented periods in a manner consistent with our updated internal reporting. The tables below reflect the results of operations of the Company's reportable segments in continuing operations, consistent with internal reporting used by the Company.

Year ended December 31, 2020:

(in thousands)	Broadband	Tower	Corporate & Eliminations	Consolidated
External revenue				
Residential & SMB	$ 154,956	$ —	$ —	$ 154,956
Commercial Fiber	24,431	—	—	24,431
RLEC & Other	15,971	—	—	15,971
Tower lease	—	7,402	—	7,402
Service revenue and other	195,358	7,402	—	202,760
Revenue for service provided to the discontinued Wireless operations	8,989	9,653	(627)	18,015
Total revenue	204,347	17,055	(627)	220,775
Operating expenses				
Cost of services	83,439	4,896	(132)	88,203
Selling, general and administrative	39,472	1,430	44,114	85,016
Depreciation and amortization	41,076	1,906	5,721	48,703
Total operating expenses	163,987	8,232	49,703	221,922
Operating income (loss)	$ 40,360	$ 8,823	$ (50,330)	$ (1,147)
Capital expenditures	$ 117,246	$ 2,001	$ 1,203	$ 120,450

Year ended December 31, 2019:

(in thousands)	Broadband	Tower	Corporate & Eliminations	Consolidated
External revenue				
Residential & SMB	$ 142,290	$ —	$ —	$ 142,290
Commercial Fiber	23,004	—	—	23,004
RLEC & Other	18,257	—	—	18,257
Tower lease	—	6,965	—	6,965
Service revenue and other	183,551	6,965	—	190,516
Revenue for service provided to the discontinued Wireless operations	10,392	6,020	(66)	16,346
Total revenue	193,943	12,985	(66)	206,862
Operating expenses				
Cost of services	79,235	3,777	(63)	82,949
Selling, general and administrative	33,545	937	43,364	77,846
Depreciation and amortization	38,566	1,976	6,244	46,786
Total operating expenses	151,346	6,690	49,545	207,581
Operating income (loss)	$ 42,597	$ 6,295	$ (49,611)	$ (719)
Capital expenditures	$ 60,627	$ 921	$ 5,500	$ 67,048

Year ended December 31, 2018:

(in thousands)	Broadband	Tower	Corporate & Eliminations	Consolidated
External revenue				
Residential & SMB	$ 131,512	$ —	$ —	$ 131,512
Commercial Fiber	22,090	—	—	22,090
RLEC & Other	19,612	—	—	19,612
Tower lease	—	7,180	—	7,180
Service revenue and other	173,214	7,180	—	180,394
Revenue for service provided to the discontinued Wireless operations	9,906	5,016	(2,633)	12,289
Total revenue	183,120	12,196	(2,633)	192,683
Operating expenses				
Cost of services	76,731	3,687	—	80,418
Selling, general and administrative	28,103	704	42,037	70,844
Depreciation and amortization	35,992	2,406	5,992	44,390
Total operating expenses	140,826	6,797	48,029	195,652
Operating income (loss)	$ 42,294	$ 5,399	$ (50,662)	$ (2,969)
Capital expenditures	$ 43,197	$ 6,145	$ 7,289	$ 56,631

A reconciliation of the total of the reportable segments' operating income to consolidated income before taxes is as follows:

	Years Ended December 31,		
(in thousands)	2020	2019	2018
Total consolidated operating loss	$ (1,147)	$ (719)	$ (2,969)
Other income, net	3,187	3,280	3,703
Income from continuing operations before income taxes	$ 2,040	$ 2,561	$ 734

The Company's CODM does not currently review total assets by segment since the assets are centrally managed and some of the assets are shared by the segments, accordingly total assets by segment are not provided.

Note 16. Quarterly Results (unaudited)

The following table reflects selected quarterly results for the Company.

	Three Months Ended			
(in thousands, except per share data)	March 31, 2020	June 30, 2020	September 30, 2020	December 31, 2020
Revenue	$ 53,134	$ 54,336	$ 55,173	$ 58,132
Operating (loss) income	(1,364)	(1,867)	470	1,614
Income (loss) from continuing operations	150	(536)	1,412	1,600
Income from discontinued operations, net of tax	13,129	29,784	33,509	47,675
Net income	13,279	29,248	34,921	49,275
Basic - (Loss) income from continuing operations	$ —	$ (0.01)	$ 0.03	$ 0.03
Basic - Income from discontinued operations, net of tax	$ 0.27	$ 0.59	$ 0.67	$ 0.96
Basic net income per share	$ 0.27	$ 0.58	$ 0.70	$ 0.99
Diluted - (Loss) income from continuing operations	$ —	$ (0.01)	$ 0.03	$ 0.03
Diluted - Income from discontinued operations, net of tax	$ 0.27	$ 0.59	$ 0.67	$ 0.95
Diluted net income per share	$ 0.27	$ 0.58	$ 0.70	$ 0.98

	Three Months Ended			
(in thousands except per share data)	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
Revenue	$ 49,895	$ 51,551	$ 51,814	$ 53,602
Operating (loss) income	(1,765)	915	681	(550)
Income (loss) from continuing operations	607	1,509	1,168	(896)
Income from discontinued operations, net of tax	13,303	11,640	13,186	15,439
Net income	13,910	13,149	14,354	14,543
Basic - Income (loss) from continuing operations	$ 0.01	$ 0.03	$ 0.02	$ (0.01)
Basic - Income from discontinued operations, net of tax	$ 0.27	$ 0.23	$ 0.27	$ 0.30
Basic net income per share	$ 0.28	$ 0.26	$ 0.29	$ 0.29
Diluted - Income (loss) from continuing operations	$ 0.01	$ 0.03	$ 0.02	$ (0.01)
Diluted - Income from discontinued operations, net of tax	$ 0.27	$ 0.23	$ 0.27	$ 0.30
Diluted net income per share	$ 0.28	$ 0.26	$ 0.29	$ 0.29

Schedule II
Valuation and Qualifying Accounts

Changes in the Company's allowance for doubtful accounts for accounts receivable for the years ended December 31, 2020, 2019 and 2018 are summarized below:

(in thousands)	Balance at Beginning of Year	Recoveries added to allowance	Bad debt expense	Write-offs	Balance at End of Year
Year Ended December 31, 2020					
Allowance for doubtful accounts	$ 533	$ 758	$ 1,220	$ (1,897)	$ 614
Year Ended December 31, 2019					
Allowance for doubtful accounts	$ 534	$ 649	$ 1,743	$ (2,393)	$ 533
Year Ended December 31, 2018					
Allowance for doubtful accounts	$ 466	$ 631	$ 1,983	$ (2,546)	$ 534

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ITEM 16. **FORM 10-K SUMMARY**

None

Exhibits Index

Exhibit Number	**Exhibit Description**
2.1	Agreement and Plan of Merger, dated as of August 10, 2015, by and among Shenandoah Telecommunications Company, Gridiron Merger Sub, Inc. and NTELOS Holdings Corp., filed as Exhibit 2.1 to the Company's Current Report on Form 8-K, dated August 11, 2015.
3.1	Amended and Restated Articles of Incorporation of Shenandoah Telecommunications Company, effective August 31, 2019, filed as exhibit 3.2 to the Company's Quarterly Report on Form 10-Q dated September 30, 2019.
3.2	Amended and Restated Bylaws of Shenandoah Telecommunications Company, effective October 29, 2019, filed as exhibit 3.3 to the Company's Quarterly Report on Form 10-Q dated September 30, 2019.
4.1	Description of the Company's Common Stock Registered Under Section 12 of the Exchange Act of 1934
10.1	Shenandoah Telecommunications Company Dividend Reinvestment Plan filed as Exhibit 4.4 to the Company's Registration Statement on Form S-3D (No. 333-74297).
10.2	Sprint PCS Management Agreement dated as of November 5, 1999 by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.4 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.3	Sprint PCS Services Agreement dated as of November 5, 1999 by and between Sprint Spectrum L.P. and Shenandoah Personal Communications Company filed as Exhibit 10.5 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.4	Sprint Trademark and Service Mark License Agreement dated as of November 5, 1999 by and between Sprint Communications Company, L.P. and Shenandoah Personal Communications Company filed as Exhibit 10.6 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.5	Sprint Spectrum Trademark and Service Mark License Agreement dated as of November 5, 1999 by and between Sprint Spectrum L.P. and Shenandoah Personal Communications Company filed as Exhibit 10.7 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.6	Addendum I to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.8 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.7	Asset Purchase Agreement dated November 5, 1999 by and among Sprint Spectrum L.P., Sprint Spectrum Equipment Company, L. P., Sprint Spectrum Realty Company, L.P., and Shenandoah Personal Communications Company, serving as Exhibit A to Addendum I to the Sprint PCS Management Agreement and as Exhibit 2.6 to the Sprint PCS Management Agreement filed as Exhibit 10.9 to the Company's Report on Form 10-K for the year ended December 31, 2003.

10.8	Addendum II dated August 31, 2000 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.10 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.9	Addendum III dated September 26, 2001 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.11 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.10	Addendum IV dated May 22, 2003 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.12 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.11	Addendum V dated January 30, 2004 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.13 to the Company's Report on Form 10-K for the year ended December 31, 2003.
10.12	Supplemental Executive Retirement Plan as amended and restated, filed as Exhibit 10.14 to the Company's Current Report on Form 8-K dated March 23, 2007.
10.13	Addendum VI dated May 24, 2004 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company filed as Exhibit 10.15 to the Company's Report on Form 10-Q for the quarterly period ended June 30, 2004.
10.14	2005 Stock Incentive Plan filed as Exhibit 10.1 to the Company's Registration Statement on Form S-8 (No. 333-127342).
10.15	Addendum VII dated March 13, 2007 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co., L.P., APC PCS, LLC, Phillie Co, L.P., and Shenandoah Personal Communications Company, filed as Exhibit 10.31 to the Company's Report on Form 10-K for the year ended December 31, 2006.
10.16	Addendum VIII to the Sprint Management Agreement dated November 19, 2007, filed as Exhibit 10.36 to the Company's Current Report on Form 8-K dated November 20, 2007.
10.17	Addendum IX to the Sprint Management Agreement dated as of April 14, 2009, and filed as Exhibit 10.42 to the Company's Annual Report on Form 10-K dated March 8, 2010.
10.18	Addendum X dated March 15, 2010 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications Company, filed as Exhibit 10.44 to the Company's Current Report on Form 10-Q, dated May 7, 2010.
10.19	Addendum XI dated July 7, 2010 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications Company, filed as Exhibit 10.45 to the Company's Current Report on Form 8-K dated July 8, 2010.
10.20	Letter Agreement modifying section 10.2.7.2 of Addendum X dated March 15, 2010 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications Company, filed as Exhibit 10.49 to the Company's Quarterly Report on Form 10-Q dated August 8, 2011.

10.21	Addendum XII dated February 1, 2012 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications Company, filed as Exhibit 10.51 to the Company's Current Report on Form 8-K dated February 2, 2012.
10.22	Addendum XIII dated September 14, 2012 to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications, LLC, filed as Exhibit 10.53 to the Company's Current Report on Form 8-K dated September 17, 2012.
10.23	Addendum XIV dated as of November 19, 2012, to Sprint PCS Management Agreement by and among Sprint Spectrum L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications, LLC, filed as Exhibit 10.42 to the Company's Annual Report on Form 10-K dated March 5, 2013.
10.24	Addendum XV dated as of March 11, 2013, to Sprint PCS Management Agreement by and among Sprint Spectrum, L.P., WirelessCo, L.P., APC PCS, LLC, PhillieCo, L.P., Sprint Communications Company L.P. and Shenandoah Personal communications, LLC, filed as Exhibit 10.43 to the Company's Quarterly Report on Form 10-Q dated May 3, 2013.
10.25	Addendum XVI dated as of December 9, 2013 to Sprint PCS Management Agreement by and among Sprint Spectrum, L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications, LLC, filed as Exhibit 10.45 to the Company's Quarterly Report on Form 10-Q dated May 2, 2014.
10.26	Addendum XVII dated as of April 11, 2014, to Sprint PCS Management Agreement by and among Sprint Spectrum, L.P., Wireless Co, L.P., APC PCS, LLC, Phillie Co, L.P., Sprint Communications Company L.P. and Shenandoah Personal Communications, LLC, filed as Exhibit 10.46 to the Company's Quarterly Report on Form 10-Q dated May 2, 2014.
10.27	2014 Equity Incentive Plan filed as Appendix A to the Company's Definitive Proxy Statement filed on March 13, 2014 (No. 333-196990).
10.28	Master Agreement dated as of August 10, 2015, by and among SprintCom, Inc. and Shenandoah Personal Communications, LLC, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K dated August 11, 2015.
10.29	Addendum XVIII dated as of August 10, 2015, to Sprint PCS Management Agreement by and among SprintCom, Inc., Phillie Co, L.P., and Shenandoah Personal Communications, LLC, filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, dated August 11, 2015.
10.30	Amended and Restated Master Agreement, dated as of May 6, 2016, by and between Shenandoah Personal Communications, LLC and SprintCom, Inc, filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, dated May 6, 2016.
10.31	Addendum XIX to Sprint PCS Management Agreement, dated as of May 6, 2016, by and among Sprint Spectrum L.P., Wireless Co, LLC, APC PCS, LLC, Phillie Co, LLC, Sprint Communications Company L.P., Shenandoah Personal Communications, LLC and SprintCom, Inc, filed as Exhibit 10.2 to the Company's Current Report on Form 8-K, dated May 6, 2016.
10.32	Consent and Agreement, dated as of May 6, 2016, by and among Sprint Spectrum L.P., Wireless Co, LLC, APC PCS, LLC, Phillie Co, LLC, Sprint Communications Company L.P., Shenandoah Personal Communications, LLC and SprintCom, Inc. and CoBank, ACB, filed as Exhibit 10.3 to the Company's Current Report on Form 8-K, dated May 6, 2016.

10.33	Addendum XX to Sprint PCS Management Agreement dated as of March 9, 2017 by and among Sprint Spectrum L.P.; Sprint Communications Company, L.P.; SprintCom, Inc.; Horizon Personal Communications, LLC; and Shenandoah Personal Communications, LLC filed as Exhibit 10. 1 to the Company's Current Report on Form 8-K filed on March 15, 2017.
10.34	Addendum XXI to Sprint PCS Management Agreement dated as of February 1, 2018 by and among Sprint Spectrum L.P; Sprint Communications Company, L.P.; SprintCom, Inc.; and Shenandoah Personal Communications, LLC filed as Exhibit 10.1to the Company's Current Report on Form 8-K filed on February 5, 2018.
10.35	Expansion Agreement dated as of February 1, 2018 by and among Sprint Spectrum L.P.; SprintCom, Inc.; and Shenandoah Personal Communications, LLC filed as Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 5, 2018.
10.36	Credit Agreement dated as of November 9, 2018, by and among Shenandoah Telecommunications Company, certain of its subsidiaries, CoBank, ACB, as administrative agent, and the other lenders party thereto filed as Exhibit 10.1 to the Company's Current Report on Form 8-K, dated November 9, 2018.
*10.37	Form of Stock Option Awards for Executives under the 2014 Equity Incentive Plan.
*10.38	Form of Restricted Stock Unit Award for Executives under the 2014 Equity Incentive Plan.
*10.39	Form of Performance Share Unit Award for Executives under the 2014 Equity Incentive Plan.
*21	List of Subsidiaries.
*23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
*31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.
*31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.
*31.3	Certification of Principal Accounting Officer pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934.
**32	Certifications pursuant to Rule 13a-14(b) under the Securities Exchange Act of 1934 and 18 U.S.C. § 1350.
(101)	Formatted in XBRL (Extensible Business Reporting Language)

101.INS	XBRL Instance Document - the instance document does not appear in the interactive data filing because its XBRL tags are embedded within the Inline XBRL document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Filed herewith

** This certification is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (Exchange Act), or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended (Securities Act), or the Exchange Act.

SIGNATURES

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

SHENANDOAH TELECOMMUNICATIONS COMPANY

February 25, 2021	/S/ CHRISTOPHER E. FRENCH *Christopher E. French, President & Chief Executive Officer* *(Principal Executive Officer)*

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

/s/CHRISTOPHER E. FRENCH February 25, 2021 Christopher E. French	President & Chief Executive Officer, Director (Principal Executive Officer)
/s/JAMES J. VOLK February 25, 2021 James J. Volk	Senior Vice President – Chief Financial Officer (Principal Financial Officer)
/s/CHASE L. STOBBE February 25, 2021 Chase L. Stobbe	Vice President - Chief Accounting Officer (Principal Accounting Officer)
/s/THOMAS A. BECKETT February 25, 2021 Thomas A. Beckett	Director
/s/TRACY FITZSIMMONS February 25, 2021 Tracy Fitzsimmons	Director
/s/JOHN W. FLORA February 25, 2021 John W. Flora	Director
/s/ RICHARD L. KOONTZ, JR. February 25, 2021 Richard L. Koontz, Jr.	Director
/s/DALE S. LAM February 25, 2021 Dale S. Lam	Director
/s/KENNETH L. QUAGLIO February 25, 2021 Kenneth L. Quaglio	Director
/s/LEIGH ANN SCHULTZ February 25, 2021 Leigh Ann Schultz	Director

EXHIBIT 21 LIST OF SUBSIDIARIES

SHENANDOAH TELECOMMUNICATIONS COMPANY AND SUBSIDIARIES

The following are all significant subsidiaries of Shenandoah Telecommunications Company, and are organized in the Commonwealth of Virginia.

Shenandoah Cable Television, LLC
Shenandoah Mobile, LLC
Shenandoah Personal Communications, LLC
Shenandoah Telephone Company
Shentel Management Company

Exhibit 23.1

Consent of Independent Registered
Public Accounting Firm

The Board of Directors
Shenandoah Telecommunications Company:

We consent to the incorporation by reference in the registration statements on Form S-3D (No. 333-74297) and Form S-8 (Nos. 333-127342 and 333-196990) of Shenandoah Telecommunications Company of our reports dated February 25, 2021, with respect to the consolidated balance sheets of Shenandoah Telecommunications Company and subsidiaries as of December 31, 2020 and 2019, the related consolidated statements of comprehensive income, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2020, and the related notes and financial statement schedule II – Valuation and Qualifying Accounts, 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 Shenandoah Telecommunications Company.

Our report dated February 25, 2021, on the effectiveness of internal control over financial reporting as of December 31, 2020, expresses our opinion that Shenandoah Telecommunications Company and subsidiaries did not maintain effective internal control over financial reporting as of December 31, 2020, because of the effect of material weaknesses on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states the following material weaknesses have been identified and included in management's assessment:

The Company's control environment was not effective, because the Company did not have a sufficient number of trained resources with expertise in technical accounting, internal control over financial reporting, and the design and implementation of information technology solutions to complete its remediation efforts. As a result, the Company was unable to maintain an effective information and communication process, and did not have effective process-level control activities over the following areas:

- Property, plant, and equipment and depreciation expense
- Purchasing (current liabilities and operating expenses)

Our report dated February 25, 2021, on the consolidated financial statements, contains an explanatory paragraph that refers to a change in the method of accounting for leases.

/s/ KPMG LLP

McLean, VA
February 25, 2021

EXHIBIT 31.1

CERTIFICATION

I, Christopher E. French, certify that:

1. I have reviewed this annual report on Form 10-K of Shenandoah Telecommunications Company, 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(s) 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(s) 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 (or persons performing the equivalent functions):

   (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.

/S/ CHRISTOPHER E. FRENCH
Christopher E. French, President and Chief Executive Officer
(Principal Executive Officer)
Date: February 25, 2021

EXHIBIT 31.2

CERTIFICATION

I, James J. Volk, certify that:

1. I have reviewed this annual report on Form 10-K of Shenandoah Telecommunications Company, 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(s) 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(s) 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 (or persons performing the equivalent functions):

   (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.

/s/JAMES J. VOLK
James J. Volk, Senior Vice President – Chief Financial Officer
(Principal Financial Officer)
Date: February 25, 2021

EXHIBIT 31.3

CERTIFICATION

I, Chase L. Stobbe, certify that:

1. I have reviewed this annual report on Form 10-K of Shenandoah Telecommunications Company, 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(s) 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(s) 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 (or persons performing the equivalent functions):

   (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.

/s/CHASE L. STOBBE
Chase L. Stobbe, Vice President - Chief Accounting Officer
(Principal Accounting Officer)
Date: February 25, 2021

EXHIBIT 32

Written Statement of Chief Executive Officer and Chief Financial Officer
Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Each of the undersigned, the President and Chief Executive Officer and the Senior Vice President - Chief Financial Officer, of Shenandoah Telecommunications Company (the "Company"), hereby certifies that, on the date hereof:

(1) The annual report on Form 10-K of the Company for the year ended December 31, 2020 filed on the date hereof with the Securities and Exchange Commission (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) Information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/S/CHRISTOPHER E. FRENCH
Christopher E. French
President and Chief Executive Officer
(Principal Executive Officer)
February 25, 2021

/S/JAMES J. VOLK
James J. Volk
Senior Vice President – Chief Financial Officer
(Principal Fincncial Officer)
February 25, 2021

The foregoing certification is being furnished solely pursuant to Rule 13a-14(b) under the Securities Exchange Act of 1934 (the "Exchange Act") and 18 U.S.C. Section 1350 and is not being filed as part of the Report or as a separate disclosure document. This certification shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to liability under that section. This certification shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933 or the Exchange Act except to the extent this Exhibit 32 is expressly and specifically incorporated by reference in any such filing.