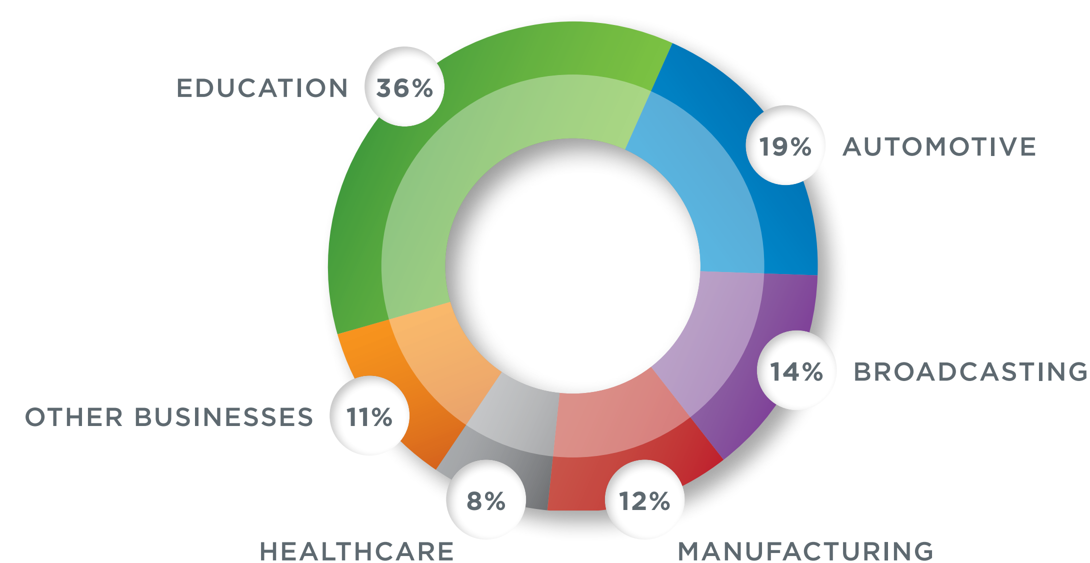
GRAHAM HOLDINGS

2022 ANNUAL REPORT

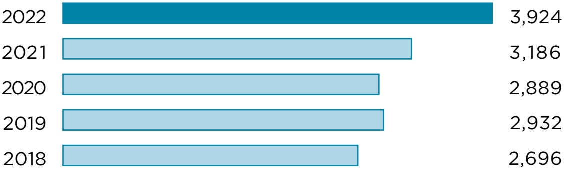
REVENUE BY PRINCIPAL OPERATIONS



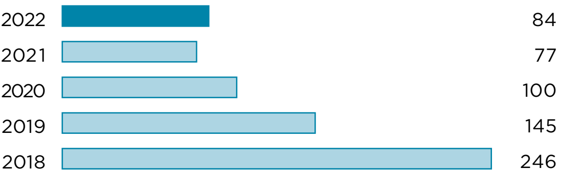
FINANCIAL HIGHLIGHTS

(IN THOUSANDS, EXCEPT PER SHARE AMOUNTS)	2022	2021	CHANGE
Operating revenues	$3,924,493	$3,185,974	23%
Income from operations	$ 83,898	$ 77,375	8%
Net income attributable to common shares	$ 67,079	$ 352,075	(81%)
Diluted earnings per common share	$ 13.79	$ 70.45	(80%)
Dividends per common share	$ 6.32	$ 6.04	5%
Common stockholders' equity per share	$ 779.55	$ 896.76	(13%)
Diluted average number of common shares outstanding	4,836	4,965	(3%)

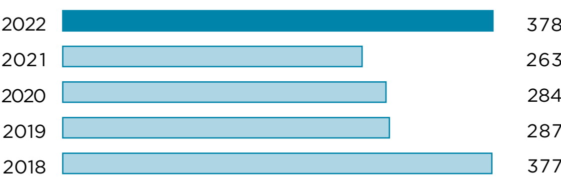
OPERATING REVENUES ($ in millions)



INCOME FROM OPERATIONS ($ in millions)

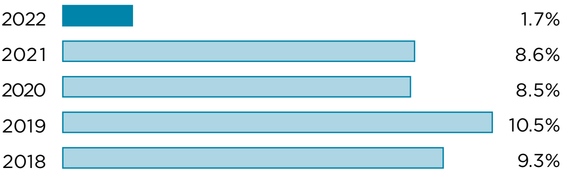


ADJUSTED OPERATING CASH FLOW[1] ($ in millions)

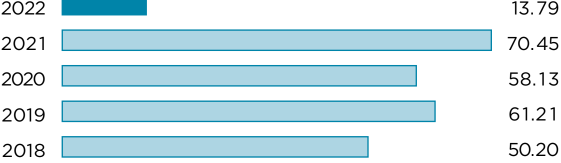


NET INCOME ATTRIBUTABLE TO COMMON SHARES ($ in millions)

RETURN ON AVERAGE COMMON STOCKHOLDERS' EQUITY



DILUTED EARNINGS PER COMMON SHARE ($)



[1]Adjusted Operating Cash Flow (non-GAAP)

(IN THOUSANDS)	2022	2021	2020	2019	2018
Operating Income	$ 83,898	$ 77,375	$100,407	$144,546	$246,161
Add: Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets	187,841	90,810	86,950	62,395	55,523
Add: Depreciation Expense	73,297	71,415	74,257	59,253	56,722
Add: Pension Service Cost	32,567	22,991	22,656	20,422	18,221
Adjusted Operating Cash Flow (non-GAAP)	$377,603	$262,591	$284,270	$286,616	$376,627

[1]Adjusted Operating Cash Flow (non-GAAP) is calculated as Operating Income excluding Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets plus Depreciation Expense and Pension Service Cost.

TO OUR SHAREHOLDERS

2022 at Graham Holdings was a year of improvement in operating results paired with additional reduction in share count. Our primary focus was, and continues to be, enhancing the operating results of our divisions. While there were no parent-level transactions in 2022, we did work with several of our businesses to complete a few "bolt-on" acquisitions.

I cannot remember the beginning of a year where the range of potential outcomes was as wide as it was at the start of 2022. The omicron variant of COVID-19 threatened to upend the fragile recovery we began to see in some of our businesses impacted by the pandemic, most notably Kaplan International and at several other units, such as Clyde's Restaurant Group. Additionally, while an election year brings expected demand in political advertising, that spend is highly race specific. In light of the geographic footprint at Graham Media Group, our ability to get a share of that advertising was not guaranteed.

We are pleased to report that as we exited 2022, the business strengthened as the year progressed. By year-end, we largely considered ourselves in a post-COVID operating environment, with the financial results beginning to match up with that assertion.

Operating results increased from 2021 by $113 million to $304 million in adjusted operating free cash flow. The largest increases were at Graham Media Group and Kaplan, although several other units showed meaningful progress as well. Improvements were somewhat offset by declines at Leaf Group.

We deployed shareholder capital primarily in two areas throughout the year.

First, we were able to continue to grow two of our platforms, Graham Healthcare and Automotive, with bolt-on acquisitions.

At Graham Healthcare Group, we had several notable transactions:

1) we created a new joint venture with our Northern Illinois Home Health and Hospice operations;

2) we extended our in-home capabilities through the acquisition of The Skin Clique, which provides aesthetician services from the comfort of home;

3) we entered the applied behavioral analysis (ABA) therapy industry through the acquisition of Surpass Behavioral Health, a clinical provider of therapy to kids with autism. We think we can be an excellent owner for the business with a focus on building an environment that drives great clinical outcomes for children.

Additionally, this past summer we acquired two dealerships at Graham-Ourisman Automotive: a Toyota dealership and a Chrysler/Dodge/Jeep/Ram dealership, both located in Woodbridge, VA. These dealerships help us continue to build out our Washington, D.C. area footprint, increase our brand portfolio, and leverage our D.C. based operating structure.

The second big use of capital was the repurchase of approximately 122,000 shares, which reduced shares outstanding by approximately 2.5%. We don't repurchase all the time and the pace may change depending on our view of the discount to intrinsic value and corresponding margin of safety. As a reminder, we do not have set programs to spend a certain amount of money on share repurchases within a defined period, but only purchase when we believe doing so will create real value for shareholders.

> “We are pleased to report that as we exited 2022, the business strengthened as the year progressed. By year-end, we largely considered ourselves in a post-COVID operating environment, with the financial results beginning to match up with that assertion.”

I'd like to elaborate a bit about how this approach is, in our belief, the only way that companies should look at share repurchases.

From the middle of 2015 through the end of 2022, the Company repurchased approximately 1,188,000 shares for a total price of $592 million. Now, let's consider an alternate universe. In this universe, the Company authorizes a $592 million share repurchase on July 1, 2015 to be spent ratably through December 31, 2022, assuming the trading prices were equal to the average of the high and low for each day. Under these parameters, our theoretical program would have repurchased approximately 1,063,000 shares.

Our program in the latter scenario would have resulted in approximately 125,000 additional shares outstanding today, or an incremental 2.6%. By not having a set repurchase program, we were able to acquire approximately 11.7% more shares as compared with the alternative universe.

We believe that over time, continuing shareholders will be much better off with this approach. For clarity, we'd like to share a few guidelines that we feel are unlikely to change:

- We do not have a set program that commits us to buying shares regardless of price.
- We do not repurchase shares with the sole purpose of offsetting any share issuances or stock-based compensation (of which we tend to do very little to begin with). Price matters in all circumstances.
- We do not use a share repurchase program or repurchase program announcement with the hopes of artificially elevating the share price in the short term.
- We do not repurchase shares where the result would put our balance sheet at risk or limit our ability to be opportunistic in creating higher value elsewhere.

OPERATING BUSINESSES

The recovery at Kaplan has been incredibly gratifying for all involved. After nearly two and a half years of operations constrained by the pandemic, Kaplan began to emerge from its COVID cocoon more fully by the second half of 2022. We've seen that our ability in 2020 and 2021 to maintain operations, treat our partners well and invest through a remarkably challenging period has led to a competitive environment where we can play offense while many competitors are struggling with too much leverage and the ramifications of short-sighted business practices.

Kaplan's adjusted operating free cash flow increased by $29 million from 2021 to $108 million. We expect these positive trends to continue, led by Kaplan International.

Kaplan Languages drove most of the improvement. The ability to travel across borders resumed in much of the world in 2022. China's policy changes around both COVID-19 and travel late in the year should increase student participation in Languages (as well as in Pathways and other Kaplan businesses) in 2023.

> “The future at Kaplan is bright. Our strategy of helping rising global middle-class populations achieve their academic goals is full of opportunity and societal impact. We look forward to being able to accelerate these efforts in a post-pandemic world.”

While we continue to see improved results at Kaplan International, because of the duration of some programs, we don’t expect that enrollments will be normalized until the fall 2023 enrollment cycle, when we expect post-COVID enrollments will have mostly returned to pre-pandemic levels.

Kaplan North America faces several headwinds, but continues to perform admirably.

At the Higher Education division, lower unemployment tends to depress the demand for degrees. In 2022, the U.S. unemployment rate ended the year at 3.5%, among the lowest recorded numbers for many of us in our lifetimes. This notwithstanding, the census at Purdue Global held up, with a generally stable student count at the end of 2022. Additionally, we continue to ramp up our relationships with newer partners such as Wake Forest, Lynn University and Creighton University.

Within Supplemental Education, the traditional test prep business continues to adjust to a challenging market. In addition to being exposed to the same unemployment trend as the Higher Education business (which leads many students to defer graduate school), many colleges and universities have moved to a “test optional” approach to the SATs, ACTs and some graduate exams. While this has, logically, lowered overall demand for the academic test preparation products, demand for most professional licensure products remains steady at Kaplan. The team continues to work toward achieving the right balance between its offerings and market demand, while at the same time developing product extensions to this large, valuable customer base — all while controlling costs to maintain adequate operating results.

The future at Kaplan is bright. Our strategy of helping rising global middle-class populations achieve their academic goals is full of opportunity and societal impact. We look forward to being able to accelerate these efforts in a post-pandemic world.

Catherine Badalamente took the reins at Graham Media Group (GMG) from Emily Barr in 2022, and she is off to a great start. GMG reported adjusted operating free cash flow of $211 million in 2022, up $52 million from 2021, largely due to election cycle related political advertising. Results in 2023 will be down, as minimal political advertising is expected.

The local media business continues to have an evolving place in the universe. As other sources of local news (such as newspapers) diminish, the relative importance of broadcast to communities has increased. But cord cutting and the unbundling of the media ecosystem creates a more fragmented environment that requires a great deal of time, effort and sophistication to be able to deliver for consumers.

So what are Catherine and the GMG team doing to combat and lean into these changes?

First, we are maintaining the integrity of the core business and newscasts. This remains the primary business model at GMG. If we don’t deliver

a good product, we will hurt our financial results and our ability to build for the future.

Second, we are focused on being the go-to digital source in our markets. A number of years ago, the team set out to accomplish what seemed to be an unlikely task: become the most trafficked local news site in each one of our markets. If we could pair a strong broadcast presence with a strong digital presence in our local communities, we thought our strategic position would be enhanced for the next phase of local media. Newspapers and other independent properties had a bit of a head start, but in our opinion, not an insurmountable one.

I am pleased to report that in 2022, per Comscore, GMG had the most visited local news site in each of its markets. And these aren't just vanity metrics; Catherine and her team have been able to build profitable, scaled digital businesses that drive real cash flow for the Company.

Lastly, we are leaning into our roles as community connectors. We believe GMG can facilitate community interactions. Our reach and the strength of our brands allows us to do unique things.

An example: For those who know Texas, you know that high school football reigns supreme. In San Antonio, our wonderful team at KSAT, then led by General Manager Phil Lane (who is now the station manager in Houston), created "The Pigskin Classic" to kick off the high school football season. He rented out the Alamodome and hosted a triple-header comprised of six of the top local teams. With VIP parties, thousands in attendance, live broadcasting of the games and much more, the event became an instant San Antonio classic. Importantly, the event was also economically meaningful for KSAT.

Our ability to create community and engage directly with our audiences is a core piece of the future at Graham Media Group and is in line with the mission of our work.

2022 was an investment year at Graham Healthcare Group (GHG). We invested in expanding into several new geographies in the home health and hospice business, expanding into additional service lines and growing the capabilities of our management team. Taking those investments into account, operating results were still quite adequate. Adjusted operating free cash flow declined slightly from $30.5 million to $30 million. GHG also earned $8 million in 2022 and $10 million in 2021 from its interests in four home health and hospice joint ventures.

Perhaps more importantly, we could not be more pleased with how we are positioned for the future; our operations are well-run and capable of growth. The societal need for in-home care is only growing; it makes sense for patients, and it can lower costs for the healthcare system.

GHG served over 70,000 patients in 2022. Our home health and hospice services are the largest of these operations. We remain the largest provider in Michigan, Pennsylvania and Illinois, and we still see additional opportunities to grow.

> **"2022 was an investment year at Graham Healthcare Group. We invested in expanding into several new geographies in the home health and hospice business, expanding into additional service lines and growing the capabilities of our management team."**

> In addition to the dealerships acquired in July, which led to increased earnings, we continued to expand our service operations and grow our service footprint. Our repair order volumes saw double-digit percentage increases and we are hopeful this trend will continue.

Last year, we created a new joint venture in the Chicago area with the NorthShore University HealthSystem, launched new operations in previously unserved areas of Michigan and Ohio, and established a foothold in Florida via acquisition.

Elsewhere, our in-home infusion services operation, CSI Pharmacy (CSI), continues to meet the market need. CSI provides service for patients with chronic and rare illnesses that require complex care. We have continued to grow our census and provide a growing number of patients the opportunity to receive this care from the comfort of their own homes. By providing outstanding service and working as patient advocates, we can help doctors and patients alike.

Still, challenges remain. By 2030, the healthcare industry is estimated to need 50% more nurses than it has today. Current estimates anticipate the number of nurses to only grow by 7% over the same period. We are focused on being a great place for nurses to build a career and are implementing many programs and benefits to increase the attractiveness of our workplace.

We believe our focus on patient satisfaction and outcomes sets us up well for a world where value-based care becomes a larger part of the ecosystem. GHG provides quality services with good outcomes. We think this formula will work even as the inevitable shifts in the healthcare system occur.

[1]Adjusted Operating Free Cash Flow (non-GAAP)

(IN THOUSANDS)	Total Company	Education	Television Broadcasting	Healthcare
2022				
Operating Income	$83,898	$82,933	$201,879	$15,265
Add: Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets	187,841	16,170	5,440	3,776
Add: Pension Service Cost	32,567	8,934	3,554	11,008
Adjusted Operating Free Cash Flow (non-GAAP)	**$304,306**	**$108,037**	**$210,873**	**$30,049**
2021				
Operating Income	$77,375	$50,573	$149,422	$26,806
Add: Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets	90,810	19,319	5,440	3,106
Add: Pension Service Cost	22,991	9,357	3,575	561
Adjusted Operating Free Cash Flow (non-GAAP)	**$191,176**	**$79,249**	**$158,437**	**$30,473**

[1]Adjusted Operating Free Cash Flow (non-GAAP) is calculated as Operating Income excluding Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets plus Pension Service Cost.

Our Automotive segment continues to flourish in partnership with Chris Ourisman. Chris and his team manage an increasingly complex universe of operations on our behalf.

While supply chain issues in 2022 led to favorable pricing on new vehicles, our results were only partially due to this tailwind. In addition to the dealerships acquired in July, which led to increased earnings, we continued to expand our service operations and grow our service footprint. Our repair order volumes saw double-digit percentage increases and we are hopeful this trend will continue.

Because the new vehicle supply chain issues are likely to abate over time, our group is almost certainly over-earning. When prices normalize, our income will as well. But we are thrilled to be in business with Chris and building a great dealership platform.

The last of our businesses I'll provide an update on is Leaf Group. While most of what I have reported thus far is good news, unfortunately the next chapter is not. Leaf Group, our collection of media and commerce brands acquired in 2021, has struggled. Those struggles accelerated as 2022 progressed. As a result, we took a goodwill and other assets impairment charge of $129 million in Q4 of 2022.

In short, Leaf has underperformed our expectations and we overpaid. I screwed this one up. To make matters worse, we're not out of the woods yet. Trends around advertising were not favorable as we exited 2022 and Society6 continued to see depressed demand and inflationary pressures. As a result, Leaf Group incurred substantial losses in 2022 which we expect to continue into 2023.

We are working diligently to improve the operating results with a goal to achieve a reduction in losses in 2023 and put the business on better footing. We will keep you updated on progress and developments at Leaf as they occur.

At Graham Holdings, our true north is growing intrinsic value for shareholders and driving an increase in per share value. While several components can reasonably drive one's view of value, free cash flow generation is almost certain to be on anyone's list.

While any one or two years may have substantial investments that temporarily depress cash flow generation or have a particularly bad trading environment, looking at longer periods may provide a better sense of progress.

If we then look at this in the context of share count increases or decreases over the same period, it can provide a helpful view of whether the underlying earning power of the business is growing or shrinking, the rate of that change, and how that cash flow is "allocated" to shareholders based on the shares outstanding.

Graham Holdings board member Tom Gayner, CEO of Markel Corporation, has used a five-year window as a comparative period at Markel. I admire Tom and Markel in many ways and—while

"At Graham Holdings, our true north is growing intrinsic value for shareholders and driving an increase in per share value. While several components can reasonably drive one's view of value, free cash flow generation is almost certain to be on anyone's list."

our businesses are different — if it works for Tom, it works for me. A five-year window is likely the bare minimum we would use for comparative purposes; longer comparison periods would provide even better perspective.

So what does this look like at Graham Holdings?

First, a note about how we look at free cash flow. We think operating income excluding amortization and pension expense is a pretty good proxy. Our goal is to consider the cash generated and available for reinvestment or distribution to shareholders. We exclude amortization because of the non-cash nature of the expense; the pension expense is excluded because our pension trust is overfunded to the point that the Company is unlikely to need to use cash to meet our pension obligations for the foreseeable future.

For the five-year period of 2013-2017, the Company had a diluted average number of common shares outstanding of approximately 6,160,000 shares. The total cumulative adjusted operating free cash flow generated over the period was $975 million. For the 2013-2017 period, in order to compare continuing operations, we calculated adjusted operating free cash flow excluding the discontinued operations of CableOne, The Washington Post and WPLG, all of which were divested or sold in the period. In addition, we used pre-tax cash flow to get the best view of underlying cash flow generation.

In the next five-years, 2018-2022, the Company had a diluted average number of common shares outstanding of approximately 5,127,000, a 17% decrease from the prior five-year period. The Company generated $1.25 billion in cumulative adjusted operating free cash flow over this period, a 28% increase.

Several years of the most recent five-year period were substantially impacted by COVID-19, depressing earning power; it's quite likely without a pandemic results would be further improved. But even with that, the benefits of the

[1] 2013-2022 Adjusted Operating Free Cash Flow (non-GAAP)
Excludes discontinued operations

(IN THOUSANDS)	2022	2021	2020	2019	2018	Total
Operating Income	$ 83,898	$ 77,375	$100,407	$144,546	$246,161	
Add: Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets	187,841	90,810	86,950	62,395	55,523	
Add: Pension Service Cost	32,567	22,991	22,656	20,422	18,221	
Adjusted Operating Free Cash Flow (non-GAAP)	**$304,306**	**$191,176**	**$210,013**	**$227,363**	**$319,905**	**$1,252,763**

(IN THOUSANDS)	2017	2016	2015	2014	2013	Total
Operating Income (Loss)	$136,403	$222,869	$(158,140)	$149,402	$103,325	
Add: Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets	50,801	28,274	278,717	35,489	15,169	
Add: Pension Service Cost	18,687	20,461	24,402	23,550	25,590	
Adjusted Operating Free Cash Flow (non-GAAP)	**$205,891**	**$271,604**	**$144,979**	**$208,441**	**$144,084**	**$974,999**

Increase in 2018-2022 Adjusted Operating Free Cash Flow as compared to 2013-2017 Adjusted Operating Free Cash Flow	**28%**

[1] *Adjusted Operating Free Cash Flow (non-GAAP) is calculated as Operating Income excluding Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets plus Pension Service Cost.*

happy combination of reduced share count and adjusted operating free cash flow shine through.

Shareholders who owned a constant number of shares over these two periods would have seen company adjusted operating free cash flow increase by 28% while their ownership interest and, arguably, their "claim" on that cash flow would have separately increased by 20%. They now own a bigger piece of a bigger income pie.

We subscribe to the philosophy that if share count goes down while free cash flow goes up, it usually leads to good things for shareholders.

There are a few other items to note before I close.

The longtime CEO of Hoover Treated Wood Products, Barry Holden, announced his retirement as CEO after 50 years at the company, the last five as part of Graham Holdings. Barry oversaw multiple transitions at the business, grew the company to be the market leader, and delivered consistent earnings along the way. Hoover is a wonderful business for Graham Holdings and our shareholders owe a debt of gratitude to Barry for building a great business we are proud to own.

After a successful meeting last year, we will once again hold our Annual Meeting of Shareholders on May 4, 2023 at 8:30 a.m. at The Hamilton Live in downtown Washington, D.C. Many members of management will be in attendance and we hope to see you there.

Thank you again for your support and partnership.

Timothy J. O'Shaughnessy
President and Chief Executive Officer
February 24, 2023

A MESSAGE FROM DON GRAHAM

Graham Holdings is a public company that takes its responsibilities to all its shareholders seriously. Members of my family have been significant shareholders since The Washington Post Company was formed in 1947 (we changed our name to Graham Holdings Company in 2013).

I'm a family member who served as CEO for 24 years; I've been chairman of our board of directors since 1993. One of my jobs has been to ensure a successful transition to another generation.

I recommended to the board that Tim O'Shaughnessy succeed me as CEO. Seven years later, I couldn't feel better about that choice. Just take a look at the financial statements in this report and you'll know why.

At 77, it is time for me to step aside as chairman of the board. And luckily, there's a great successor available. Anne Mulcahy is pretty famous in the business world; she took over Xerox after the SEC forced the company to restate its revenues and profits. The company's survival was thought to be in doubt. One leader — Anne Mulcahy — saw it through. If you want to hear one of the great business stories of this century, watch any of the interviews in which Anne tells the story on YouTube.

Tim and Anne have asked me to stay on the board as chairman emeritus. I care about the Company's future as much as ever. Most of my net worth is in Graham Holdings stock. I'll be keeping every share.

Donald E. Graham
Chairman of the Board
February 24, 2023

Education

Kaplan is a global, diversified education leader specializing in higher education, test preparation, professional education, language training and university pathway programs. Its leadership in online learning, international student recruitment and improving student outcomes has also made Kaplan a multi-purpose strategic partner for a number of universities and businesses.

Television Broadcasting

Graham Media Group owns seven media hubs located in Houston, TX; Detroit, MI; Orlando, FL; San Antonio, TX; Jacksonville, FL; and Roanoke, VA, as well as SocialNewsDesk, a provider of social-media management tools designed to connect newsrooms with their users.

Manufacturing

Hoover Treated Wood Products, Inc. is a supplier of pressure impregnated kiln-dried lumber and plywood products for fire-retardant and preservative applications.

DEKKO

Group Dekko Inc. is an electrical solutions company that focuses on innovative power-charging and data systems; industrial and commercial indoor lighting solutions; and the manufacture of electrical components and assemblies for medical equipment, transportation, industrial and appliance products.

Joyce/Dayton Corporation is a leading manufacturer of screw jacks, linear actuators and related linear motion products and lifting systems in North America.

Forney Corporation is a global supplier of burners, igniters, dampers and controls for combustion processes in electric utility and industrial applications.

Automotive

The Company owns six dealerships: Ourisman Lexus of Rockville, Ourisman Honda of Tysons Corner, Ourisman Jeep of Bethesda, Ourisman Ford of Manassas, Ourisman Toyota of Woodbridge, and Ourisman Chrysler/Dodge/Jeep/Ram of Woodbridge. The Company also owns CarCare To Go, which provides valet service to and from a network of dealership service centers in the Washington, D.C. area.

Healthcare

Graham Healthcare Group operates 18 home health, 10 hospice and four palliative care operating units in Michigan, Illinois, Pennsylvania, Kansas, Missouri, Ohio and Florida. Graham Healthcare Group also provides other healthcare services, including nursing care and prescription services for patients receiving in-home infusion treatments.

Other Businesses

Leaf Group is a consumer internet company that builds enduring, creator-driven brands reaching passionate audiences in large and growing lifestyle categories, including fitness and wellness (Well+Good and Livestrong.com); and home, art and design (Saatchi Art, Society6, Hunker and e-How).

Clyde's Restaurant Group owns and operates 11 restaurants and entertainment venues in the Washington, D.C. metropolitan area, including Old Ebbitt Grill, The Hamilton, 1789 Restaurant, Fitzgerald's, The Tombs, and six Clyde's locations.

FRAMEBRIDGE

Framebridge is a custom framing services company that provides high-quality, affordable and fast custom framing of artwork, pictures and other personal items directly to consumers through its website, app and retail locations.

Code3 (formerly SocialCode) is a performance marketing partner working at the intersection of media, creative and commerce to help brands succeed faster on every digital platform.

Decile LLC is a customer data and analytics software company that helps marketers extract value from their proprietary first-party customer and sales data.

The FP Group produces Foreign Policy magazine and the ForeignPolicy.com website reaches an international audience of millions as a trusted source of insight and analysis for government, business, finance and academic leaders.

Pinna is an audio-first children's media company delivering the first and only worldwide audio on-demand streaming service for kids ages 3-12 that includes podcasts, music and audiobooks.

Slate is an online magazine of news, politics, technology and culture. The magazine combines humor and insight in thoughtful analyses of current events and political news.

City Cast is a growing network of one-of-a-kind, daily local news podcasts accompanied by a daily email newsletter about what's happening in local communities. City Cast is currently in Chicago, Denver, Houston, Salt Lake, Pittsburgh, Las Vegas, Boise, Washington D.C., Philadelphia, Portland, and Madison.

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

FORM 10-K

☒ **Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

For the Fiscal Year Ended December 31, 2022

or

☐ **Transition Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934**

Commission file number 001-06714

Graham Holdings Company
(Exact name of registrant as specified in its charter)

Delaware	**53-0182885**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
1300 North 17th Street, Arlington, Virginia	**22209**
(Address of principal executive offices)	**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (703) 345-6300

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class B Common Stock, par value $1.00 per share	**GHC**	**New York Stock Exchange**

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

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

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

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

Aggregate market value of the registrant's common equity held by non-affiliates on June 30, 2022, based on the closing price for the Company's Class B Common Stock on the New York Stock Exchange on such date: approximately $2,200,000,000.

Shares of common stock outstanding at February 17, 2023:

Class A Common Stock – 964,001 shares
Class B Common Stock – 3,827,123 shares

Documents partially incorporated by reference:

Definitive Proxy Statement for the registrant's 2023 Annual Meeting of Stockholders (incorporated in Part III to the extent provided in Items 10, 11, 12, 13 and 14 hereof).

GRAHAM HOLDINGS COMPANY 2022 FORM 10-K

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PART I

Item 1. Business.

Graham Holdings Company (the Company) is a diversified holding company whose operations include: education, television broadcasting–online, podcast, print and local TV news; manufacturing; home health and hospice care; automotive dealerships; and other businesses. Through Kaplan, Inc. (Kaplan), the Company provides a wide variety of educational services to students, schools, colleges, universities and businesses, both domestically and outside the United States (U.S.), including academic preparation programs for international students, English-language programs, operations support services for pre-college, certificate, undergraduate and graduate programs, exam preparation for high school and graduate students and for professional certifications and licensures, career and academic advisement services to businesses, and operates a United Kingdom (U.K.) sixth-form college that prepares students for A-level examinations. The Company's television broadcast segment owns and operates seven television broadcast stations and provides social media management tools designed to connect newsrooms with their users. The Company's manufacturing companies comprise the ownership of a supplier of pressure treated wood, a manufacturer of electrical solutions, a manufacturer of lifting solutions, and a supplier of parts used in electric utilities and industrial systems. The Company's healthcare segment provides home health, hospice and palliative services, in-home specialty pharmacy infusion therapies, applied behavior analysis therapy, physician services for allergy, asthma and immunology patients, in-home aesthetics, and healthcare software-as-a-service technology. The Company's automotive business comprises six dealerships and valet repair services. The Company's other businesses include a consumer internet company that builds creator-driven brands in lifestyle, home and art design categories; restaurants; a custom framing company; a marketing solutions provider; a customer data and analytics software company; *Slate* and *Foreign Policy* magazines; an ad-free audio streaming service for children; and a daily local news podcast and newsletter company.

Financial information concerning the principal segments of the Company's business for the past three fiscal years is contained in Note 19 to the Company's Consolidated Financial Statements appearing elsewhere in this Annual Report on Form 10-K. Revenues for each segment are shown in Note 19 gross of intersegment sales. Consolidated revenues are reported net of intersegment sales, which did not exceed 0.1% of consolidated operating revenues.

The Company's operations in geographic areas outside the U.S. consist primarily of Kaplan's non-U.S. operations. During each of the fiscal years 2022, 2021 and 2020, these operations accounted for approximately 20%, 22% and 22%, respectively, of the Company's consolidated revenues, and the identifiable assets attributable to non-U.S. operations represented approximately 21% and 19% of the Company's consolidated assets at December 31, 2022 and 2021, respectively.

EDUCATION

Kaplan provides an extensive range of education and related services worldwide for students, universities and businesses. Kaplan products and services reach learners directly or through Kaplan's many relationships. These include approximately 13,000 companies and approximately 4,100 universities, colleges, schools and school districts, which, along with individual students and professionals, pay for Kaplan's products and services. In 2022, Kaplan was the provider for the educational needs of approximately 1.2 million students and professionals worldwide who engaged with Kaplan services and materials in-person, online, through their schools (K-12, college, or university) or through their employer education or coaching programs. In 2022, Kaplan's reach also included sales of 1.9 million units of book/study aid products to individuals, businesses, schools, colleges and universities.

Kaplan executes its operations through three segments: Kaplan International, Kaplan North America Higher Education and Kaplan North America Supplemental Education. As more fully described below, in 2020, Kaplan consolidated its three segments based in the United States–Kaplan Higher Education, Kaplan Test Preparation and Kaplan Professional–into one business, Kaplan North America, operating through two segments, Higher

Education and Supplemental Education. In addition, the results of the Kaplan Corporate segment include results of Kaplan's investment activities in education technology companies. The following table presents revenues for each of Kaplan's segments:

	Year Ended December 31		
(in thousands)	2022	2021	2020
Kaplan International	**$ 816,239**	$ 726,875	$ 653,892
Kaplan North America Higher Education	**304,136**	317,854	316,095
Kaplan North America Supplemental Education	**301,625**	309,069	327,087
Kaplan Corporate and Intersegment Eliminations	**5,915**	7,447	8,639
Total Kaplan Revenue	**$1,427,915**	$1,361,245	$1,305,713

Kaplan International

Kaplan International (KI) operates businesses in Europe and the Middle East, North America and the Asia Pacific region, each of which is discussed below.

Europe and the Middle East. In Europe, KI operates the following businesses, all of which are based in the U.K. and Ireland: Kaplan UK, KI Pathways, Kaplan Languages Group, Mander Portman Woodward, Dublin Business School, Kaplan Open Learning and BridgeU. In the Middle East, Kaplan Middle East is based in the United Arab Emirates.

The Kaplan UK business in Europe, through Kaplan Financial Limited, is a provider of apprenticeship training and test preparation services for accounting and financial services professionals, including those studying for ACCA, CIMA and ICAEW qualifications. In 2022, Kaplan UK provided courses to over 47,000 students in accountancy and financial services. In addition, Kaplan UK has been the sole authorized assessment provider for the Solicitors Regulation Authority (SRA) of assessments under the Qualified Lawyers Transfer Scheme (QLTS) for candidates seeking to become solicitors of England and Wales who are already qualified lawyers in certain recognized jurisdictions. In 2018, Kaplan UK was awarded the contract by the SRA to become the sole authorized assessment provider for the Solicitors Qualifying Examination (SQE) for all candidates seeking to become a solicitor in England and Wales. The first SQE assessments took place in 2021 and the QLTS has now been discontinued as all candidates are required to take the SQE. Kaplan UK is headquartered in London, England, and has 16 training centers located throughout the U.K.

The KI Pathways business offers academic preparation programs especially designed for international students who wish to study for degrees at universities in English-speaking countries and recruits international students for enrollment in certain U.S. and U.K. university partner programs. In 2022, university preparation programs were delivered in Australia, Japan, Singapore, Myanmar, the U.K. and the U.S. No new students were enrolled in the Myanmar program in 2022.

The Kaplan Languages Group business provides English-language training, academic preparation programs and test preparation for English proficiency exams, principally for students wishing to study and travel in English-speaking countries. As of December 31, 2022, the Kaplan Languages Group operated 19 English-language schools, with 12 located in the U.K., Ireland and Canada and seven located in the U.S. In 2022, the Kaplan Languages Group served approximately 24,500 students for in-class and online English-language instruction, which is an increase of over 50% of the number of students served in 2021, reflecting a rebound in the business from the pandemic. Through the Alpadia language schools located in France, Germany and Switzerland, Kaplan Languages Group also offers French and German language training to adolescents (from 16+) and adults. Alpadia also operates language camps for juniors (from 8+) and teens during the fall, spring and summer seasons in the U.K., France, Germany and Switzerland. As of December 31, 2022, the Alpadia language schools served approximately 6,700 students.

Mander Portman Woodward (MPW) is a U.K. independent sixth-form college that prepares domestic and international students for the A-level examinations U.K. universities require for admission. MPW comprises three fifth- and sixth-form colleges in London, Cambridge and Birmingham.

KI also operates Dublin Business School in Ireland, a higher education institution, and Kaplan Open Learning in the U.K., an online learning institution. At the end of 2022, these institutions enrolled an aggregate of approximately 10,400 students.

In 2022, Kaplan Middle East, a financial training business operating in Dubai, United Arab Emirates and Saudi Arabia, taught approximately 3,500 students.

U.K. Immigration Regulations. Certain KI businesses serve a significant number of international students; therefore, it is critical for these businesses to be able to sponsor international students to come to the U.K. The United Kingdom Visas and Immigration Department (UKVI) administers certain regulations pursuant to which the KI Pathways business is required to hold or operate Student Route sponsorship licenses. These licenses are required for international students to enter the U.K. to enroll in the courses KI Pathways delivers. One of the Kaplan Languages Group schools also has a Student Route license enabling it to teach international students.

Each Student Route license holder is required to have passed the annual Basic Compliance Assessment (BCA) and hold Educational Oversight accreditation, which requires a current and satisfactory full risk assessment, audit or review by the appropriate academic standards body. For the eleventh consecutive year, all KI institutions have retained Educational Oversight accreditation, with high grades across colleges, and all Student Route annual BCA renewals have been approved with high scores in the core measurable requirements. Kaplan Languages Group has one U.K. English-language school listed on the Kaplan Student master license although students at these schools generally choose to enter the U.K. on a Visitor or Short Term Student visa as opposed to a Student Route visa. The MPW schools each hold current Student and Child Student Route licenses and have performed well consistently, with good records in their Office for Standards in Education, Children's Services and Skills (OFSTED) and Independent Schools Inspectorate Educational Oversight inspections.

The Higher Education and Research Act 2017 created a new regulator for England, the Office for Students (OfS). All of KI's higher education businesses in the U.K., excluding Glasgow International College and University of York International Pathway College, retained registration with the OfS in 2022 to ensure that they could continue operating and retain their Student Route sponsor licenses and/or continue to accept students funded by U.K. student loans. Glasgow International College, located in Scotland, is not regulated by the OfS and remains overseen by the Quality Assurance Agency for Higher Education (QAA). The University of York International Pathway College forms part of the University of York's OfS registration. No assurance can be given that each KI business in the U.K. will be able to maintain its Student Route or Child Student route license and Educational Oversight or OfS/QAA registration. Maintenance of each of these approvals requires compliance with several core metrics that may be difficult to sustain. The loss by one or more institutions of either the Student Route or Child Student route license or Educational Oversight or OfS/QAA registration would have a material adverse effect on KI Europe's operating results.

Impact of Brexit. On June 23, 2016, the U.K. held a referendum in which voters approved a proposal that the U.K. leave the European Union (EU), commonly referred to as "Brexit." The U.K.'s withdrawal became effective on December 31, 2020. The impact of Brexit on KI over time will depend on the long-term effects of the terms of the U.K.'s withdrawal from the EU. If the U.K. is no longer viewed as a favorable study destination, KI's ability to recruit international students will be adversely impacted, which would materially adversely affect KI's results of operations and cash flows. In November 2021, the EU granted the U.K. an adequacy decision under the General Data Protection Regulation (GDPR) for an initial period of four years.

Asia Pacific. In the Asia Pacific region, Kaplan operates businesses primarily in Singapore, Australia, New Zealand and the People's Republic of China, including the Hong Kong Special Administrative Region (Hong Kong).

In Singapore, Kaplan operates two business units: Kaplan Higher Education and Kaplan Financial (which comprises the former Kaplan Higher Education Academy (KHEA)-Genesis business unit). During 2022, the Kaplan Higher Education and Kaplan Financial divisions served more than 6,200 students from Singapore and approximately 2,300 students from other countries throughout Asia and Western Europe. Kaplan Financial provided short courses to approximately 50 professionals, managers, executives and businesspeople in 2022.

Kaplan Singapore's Higher Education business provides students with the opportunity to earn bachelor's and postgraduate degrees in various fields on either a part-time or full-time basis. Kaplan Singapore's students receive degrees from affiliated educational institutions in Australia, Ireland and the U.K. In addition, this division offers pre-university and diploma programs.

Kaplan Singapore's Kaplan Financial business provides preparatory courses for professional qualifications in accountancy and finance, such as the Association of Chartered Certified Accountants (ACCA) and Chartered Financial Analyst (CFA). Previously, Kaplan Financial, through Kaplan Learning Institute, an authorized SkillsFuture Singapore (SSG) Approved Training Organization (ATO), provided professionals with various skills training through workforce skills qualifications (WSQ) courses. Kaplan Learning Institute ceased offering such courses and voluntarily deregistered Kaplan Learning Institute as a private education institution on March 9, 2020, following a notice in June 2019 from SSG suspending Kaplan Singapore Professional's WSQ ATO status and revoking accreditation and funding for all WSQ courses effective July 1, 2019. These actions have adversely affected and will continue to adversely affect Kaplan Singapore's revenues and operating results.

On October 7, 2020, Kaplan Higher Education Academy was granted approval by SSG to deliver WSQ courses as an ATO for a period of two years. KHEA-Genesis (Professional) started offering WSQ courses in the second quarter of 2021. In February 2022, KHEA informed SSG and the Committee for Private Education (CPE) in Singapore that KHEA would voluntarily cease offering WSQ courses, and all remaining course runs were fulfilled by mid-2022.

In June 2021, the CPE instructed Kaplan Singapore to cease new enrollments for three marketing diploma programs on both a full and part-time basis and to teach out existing students in these programs due to noncompliance with minimum entry level requirements for admission. On August 23, 2021, the CPE issued the same instructions with respect to the Kaplan Foundation diploma and four information technology diploma programs on both a full and part-time basis. In November 2021, the CPE issued the same instructions with respect to a further 23 full-time or part-time diploma programs. Kaplan Singapore successfully applied for re-registration of certain diploma and additional full-time and part-time programs in 2022. In May 2022, CPE also renewed Kaplan Singapore's registrations as a private education institution for a four-year period expiring in 2026. In 2023, Kaplan Singapore will apply to renew the certification required for private education institutions to enroll international students and offer certain programs. As enrollments in diploma programs and undergraduate degree programs are not yet at levels existing prior to the regulatory action by the CPE in 2021, the impact of such regulatory actions will continue to have an adverse impact on Kaplan Singapore's revenues, operating results and cash flows in the future while enrollment levels stabilize.

In Australia, Kaplan delivers a broad range of financial services programs from certificate level through master's level, together with professional development offerings through Kaplan Professional, as well as higher education programs in business, accounting, business analytics, hospitality, and tourism and management through Kaplan Business School. In 2022, these businesses provided courses to approximately 6,300 students through face-to-face and online or hybrid classroom programs (within Kaplan Business School) and approximately 32,000 students through online or distance-learning programs offered by Kaplan Professional. In 2022, Kaplan Professional also had approximately 34,000 subscribers for Ontrack, its continuing professional development platform for financial services professionals.

Kaplan Australia's English language business taught approximately 300 students in 2022. During 2022, three Australian English language schools were closed and consolidated into the one remaining school in Sydney,

Australia, offering online classes only. The Sydney English language school is scheduled to close in April 2023. The Kaplan Australia Pathways business is also part of KI Pathways. In 2022, it consisted of Murdoch Institute of Technology, the University of Newcastle College of International Education and the University of Adelaide College, and offered face-to-face pathways and foundational education in 2022 to approximately 1,100 students wishing to enter Murdoch University, the University of Newcastle and the University of Adelaide. The contract to run the Murdoch Institute of Technology expired in June 2021, and teaching finished in 2022. In September 2022, Kaplan Australia signed a new partnership agreement with Murdoch University to establish the new Murdoch College on the Murdoch University campus. Murdoch College commenced delivery of English, foundation studies and Murdoch University preparation courses in February 2023, and will commence a postgraduate pre-qualifying program later in 2023. Offering other planned programs is dependent on regulatory approval. In October 2021, Kaplan International New Zealand obtained approval to establish a new pathways college, Massey University College, which began diploma and graduate diploma courses in July and October 2022, respectively. Kaplan Australia also owns Red Marker Pty Ltd., a machine learning and artificial intelligence-based provider of legal risk detection for digital, advertising and marketing content. Red Marker supports a wide variety of industries, including financial services, telecoms, automotive, pharmaceutical, food and beverage, media and government bodies. Red Marker's Artemis product detects potentially noncompliant content as it is being created, helping advisers and licensees to identify and remediate compliance risks.

In Hong Kong, Kaplan operates three main business units: Kaplan Financial, Kaplan Language Training and Kaplan Higher Education, serving approximately 7,100 students annually.

Kaplan Hong Kong's Financial division delivers preparatory courses to approximately 6,100 students and business executives wishing to earn professional qualifications in accountancy, financial markets designations and other professional fields.

Kaplan Hong Kong's Language Training division offers test preparation for both overseas study and college applications, including TOEFL, IELTS, SAT and GMAT, to approximately 100 students.

Kaplan Hong Kong's Higher Education division offers both full-time and part-time programs to approximately 900 students studying for degrees from leading Western universities. Students earn doctorate, master's and bachelor's degrees in Hong Kong. Kaplan also offers a proprietary pre-college diploma program through the Kaplan Business and Accountancy School.

In 2014, Kaplan Holdings Limited (Hong Kong) signed a joint venture agreement with CITIC Press Corporation. Under the terms of the agreement, the parties incorporated a joint venture company, Kaplan CITIC Education Co. Limited, 49% of which is owned by Kaplan Holdings Limited. The joint venture company is carrying out publishing and distribution of Kaplan Financial training products in the People's Republic of China.

Each of Kaplan's international businesses is subject to unique and often complex regulatory environments in the countries in which they operate, and the degree of consistency in the application and interpretation of such regulations can vary significantly in certain jurisdictions.

Kaplan North America

As previously discussed, in 2020 Kaplan combined its segments into one business named Kaplan North America (KNA), comprised of two segments, Kaplan North America Higher Education (comprising primarily former Kaplan Higher Education (KHE) products and services) and Kaplan North America Supplemental Education (comprising primarily former Kaplan Test Preparation (KTP) and former Kaplan Professional (KP) products and services).

Through its Higher Education and Supplemental Education units, KNA provides operations support services to institutions of higher education for online courses and programs as well as directly providing courses, programs

and training to pre-college, certificate, undergraduate and graduate students, and professionals. These include professional training and exam preparation for professional certifications and licensures both direct to students and professionals and through agreements with institutions and corporate partner employees, online pre-college summer programs in partnership with traditional universities, pre-college and graduate entrance exam test preparation services. KNA 's non-academic operations support services for online pre-college, certificate, undergraduate and graduate programs are provided to institutions such as Purdue University, Purdue University Global, Creighton University, Wake Forest University and Lynn University.

Kaplan North America Higher Education

Prior Postsecondary Institutions. Prior to March 22, 2018, through the Kaplan Higher Education segment, Kaplan provided postsecondary education to students through Kaplan University (KU) online and campus-based colleges. On March 22, 2018, certain subsidiaries of Kaplan contributed the institutional assets and operations of KU to a new university: an Indiana nonprofit, public-benefit corporation affiliated with Purdue University, known as Purdue University Global (Purdue Global). As part of the transfer to Purdue Global, KU transferred students, academic personnel, faculty and operations, property leases for KU's campuses and learning centers, and Kaplan-owned academic curricula and content related to KU courses. Kaplan also indemnified Purdue for certain pre-closing liabilities, including student claims and federal student aid liability. At the same time, KU and Purdue Global entered into a Transition and Operations Support Agreement, which was amended on July 29, 2019 (TOSA), pursuant to which KNA now provides key non-academic operations support to Purdue Global in exchange for a fee based on the cost of such services. As a result of the contribution of KU, Kaplan received nominal upfront cash consideration upon the transfer of the institutional assets and operations of KU. The combination of the KHE, KTP and KP segments into one KNA business did not change Kaplan's or Purdue Global's obligations under the TOSA.

Transition and Operations Support Agreement (TOSA) with Purdue University Global (Purdue Global). Purdue Global operates largely online as an Indiana public university affiliated with Purdue University. The operations support activities that KNA provides to Purdue Global (and other institutions of higher education, including Purdue University) include technology support, help-desk functions, human resources support for transferred faculty and employees, admissions support, financial aid processing, marketing and advertising, back-office business functions, certain test preparation, and domestic and international student recruiting services.

Pursuant to the TOSA, KNA is not entitled to receive any reimbursement of costs incurred in providing support functions, or any fee, unless and until Purdue Global has first covered all of its academic costs (subject to a cap). If Purdue Global achieves cost efficiencies in its operations, Purdue Global may be entitled to an additional payment equal to 20% of such cost efficiencies (Purdue Efficiency Payment). In addition, during each of Purdue Global's first five years, prior to any payment to KNA, Purdue Global is entitled to a priority payment of $10 million per year beyond costs (Purdue Priority Payment). To the extent that Purdue Global's revenue is insufficient to pay the Purdue Priority Payment, KNA is required to advance an amount to Purdue Global to cover such insufficiency. Upon closing of the transaction, Kaplan paid to Purdue Global an advance in the amount of $20 million, representing, and in lieu of, a Purdue Priority Payment for each of the fiscal years ending June 30, 2019, and June 30, 2020.

To the extent that there is sufficient revenue to pay the Purdue Efficiency Payment, Purdue Global will be reimbursed for its academic costs (subject to a cap) and will be paid the Purdue Priority Payment. To the extent that there is remaining revenue, KNA will then be reimbursed for its operating costs (subject to a cap) of providing the support activities. If KNA achieves cost efficiencies in its operations, then KNA may be entitled to an additional payment equal to 20% of such cost efficiencies (KNA Efficiency Payment). The TOSA, as amended, reflects the parties' intent that, subject to available cash (calculated as cash balance minus cash deficiencies, if any, projected for the next six-month period based on applicable budget), KNA is entitled to receive a payment equal to 12.5% (increasing to 13% from June 30, 2023, through June 30, 2027) of Purdue

Global's revenue, which served as the deferred purchase price for the transfer of KU (Deferred Purchase Price). Separately, KNA is entitled to a fee for services provided equal to 8% of KNA's costs of providing such services to Purdue Global (Contributor Service Fee). KNA's Contributor Service Fee is deducted from any amounts owed to KNA for the Deferred Purchase Price. Together these payments are known as "Contributor Compensation." In each case, the Contributor Compensation remains subject to available cash and the limitations of payment carry over from year to year.

After the first five years of the TOSA, KNA and Purdue Global will be entitled to payments in a manner consistent with the structure described above, except that (i) Purdue Global will no longer be entitled to the Purdue Priority Payment and (ii) to the extent that there are sufficient revenues after payment of the KNA Efficiency Payment (if any), Purdue Global will be entitled to an annual payment equal to 10% of the remaining revenue after the KNA Efficiency Payment (if any) is paid, subject to certain other adjustments.

The TOSA has a 30-year initial term, which will automatically renew for five-year periods unless terminated. After the sixth year, Purdue Global has the right to terminate the agreement upon payment of an early termination fee equal to 125% of Purdue Global's total revenue earned during the preceding 12-month period, which payment would be made pursuant to a 10-year note, and at the election of Purdue Global, it may receive for no additional consideration certain tangible assets used by KNA exclusively to provide the support activities pursuant to the TOSA. At the end of the 30-year term, if Purdue Global does not renew the TOSA, Purdue Global will be obligated to make a final payment of 75% of its total revenue earned during the preceding 12-month period, which payment will be made pursuant to a 10-year note, and at the election of Purdue Global, it may receive for no additional consideration certain assets used by KNA exclusively to provide the support activities pursuant to the TOSA. Either party may terminate the TOSA at any time if Purdue Global generates (i) $25 million in cash operating losses for three consecutive years or (ii) aggregate cash operating losses greater than $75 million at any point during the initial term. Operating loss is defined as the amount by which the sum of (1) Purdue Global's and KNA's respective costs in performing academic and support functions and (2) the $10 million Purdue Priority Payment in each of the first five years following March 22, 2018, exceeds the revenue Purdue Global generates for the applicable fiscal year. Upon termination for any reason, Purdue Global will retain the assets that Kaplan contributed pursuant to the TOSA. Each party also has certain termination rights in connection with a material default or material breach of the TOSA by the other party. Short of termination, Purdue Global has the right to take over (in-source) certain back-office support functions at any time with nine-months' notice. Those include technology support, human resources, facility and property management, finance and accounting, communications, and default management. In 2022 Purdue Global began working with KNA to provide certain human resources, finance and accounting, facility management, and communications services itself, in-house.

Kaplan Postsecondary Online Managed Services. In addition to services provided to Purdue Global through the TOSA, KNA provides specific non-academic managed services to university online programs at institutions including Wake Forest, Creighton University, Lynn University, and Purdue University. These services include analytics, technology support, marketing, student advising and admissions support, and curriculum development support.

Pre-college Programs. KNA's Prelum provides online pre-college programs for high school students to explore careers and courses in partnership with leading postsecondary institutions. The programs also allow KNA's university partners to build a relationship with prospective students and to expose them to their academic offerings, unique educational approach and culture. KNA's Prelum programs have served thousands of students all over the world and in all 50 states, and include more than 20 programs in partnership with seven university partners including Wake Forest, Georgetown and Parsons Paris.

Higher Education Regulatory Environment. KNA no longer owns or operates KU or any other institution participating in student financial aid programs created under Title IV of the U.S. Federal Higher Education Act of 1965 (Higher Education Act), as amended (Title IV). KNA provides services to Purdue Global, Purdue

University, Wake Forest University, Lynn University and other Title IV participating institutions that may require KNA to comply with certain laws and regulations, including applicable statutory provisions of Title IV. Currently, KNA also provides financial aid services to Purdue Global (but no other institution). Due to the provision of these services, KNA meets the definition of a “third-party servicer” contained in the Title IV regulations. As a third-party servicer, KNA is subject to applicable statutory provisions of Title IV and U.S. Department of Education (ED) regulations that, among other things, require KNA to be jointly and severally liable with its Title IV participating client institutions to the ED for any violation by KNA or its client institutions of any Title IV statute or ED regulation or requirement. KNA is also subject to other federal and state laws, including, but not limited to, federal and state consumer protection laws and rules prohibiting unfair or deceptive marketing practices, data privacy, data protection and information security requirements established by federal state and foreign governments, including for example the Federal Trade Commission and the applicable provisions of the Family Educational Rights and Privacy Act regarding the privacy of student records. KNA’s failure to comply with these and other federal and state laws and regulations could result in adverse consequences to KNA’s business, including, for example:

- The imposition on KNA and/or Kaplan of fines, other sanctions or liabilities, including, without limitation, repayment obligations for Title IV funds to the ED or the termination or limitation on Kaplan’s eligibility to provide services as a third-party servicer to any Title IV participating institution;
- Adverse effects on KNA’s business and results of operations from a reduction or loss in KNA’s revenues under the TOSA or any other agreement with any Title IV participating institution if a client institution loses or has limits placed on its Title IV eligibility, accreditation, operations or state licensure, or is subject to fines, repayment obligations or other adverse actions due to noncompliance by KNA (or the institution) with Title IV, accreditor, federal or state agency requirements;
- Liability under the TOSA or any other agreement with any Title IV participating institution for noncompliance with federal, state or accreditation requirements arising from KNA’s conduct; and
- Liability for noncompliance with Title IV or other federal or state laws and regulations occurring prior to the transfer of KU to Purdue.

The laws, regulations and other requirements applicable to KNA or any KNA client institutions are subject to change and to interpretation. For example, a Negotiated Rulemaking began in October 2021 that covered, in part, rules related to the borrower defense to repayment adjudication process and recovery from institutions, closed school loan discharges, disability loan discharges, public loan forgiveness, income driven repayment plans and arbitration agreements. As a result of this Negotiated Rulemaking, new rules and changes to existing rules were finalized by the ED in the fourth quarter of 2022 and will be effective on July 1, 2023. Included in these new rules is a change to the Title IV definition of “nonprofit” institution to generally exclude from that definition any institution that is an obligor on a debt owed to a former owner of the institution or that maintains a revenue-based service agreement with a former owner of the institution. The ED intends to apply this new definition to public institutions as well as private nonprofit institutions. The ED also finalized changes to the Borrower Defense regulations including expanding the types of claims that can be made by students, reinstating the ability of the ED to consider claims as a group, removing limitations periods on claims, and changing the process for seeking recoupment from institutions. Such regulatory changes including those described above could subject Purdue Global to additional regulatory requirements and liabilities.

Incentive compensation. Under the ED’s incentive compensation rule, an institution participating in Title IV programs may not provide any commission, bonus or other incentive payment to any person or entity engaged in any student recruiting or admission activities or in making decisions regarding the awarding of Title IV funds if such payment is based directly or indirectly on success in securing enrollments or financial aid. KNA is a third party providing bundled services to Title IV participating institutions that include recruiting and, in the case of Purdue Global, financial aid services. As such, KNA is also subject to the incentive compensation rules as applied to the institutions it serves and cannot provide any commission, bonus or other incentive payment to any covered employees, subcontractors or other parties engaged in certain student recruiting, admission or financial

aid activities based on success in securing enrollments or financial aid. In addition, tuition revenue sharing payments to KNA under the TOSA (as well as any other agreement with any Title IV participating institution) must comply with revenue sharing guidance provided by the ED related to bundled services agreements. For more information, see Item 1A. Risk Factors. Failure to Comply with the ED's Title IV Incentive Compensation Rule Could Subject Kaplan to Liabilities, Sanctions and Fines.

Misrepresentations. A Title IV participating institution is required to comply with the ED regulations related to misrepresentations and with related federal and state laws. These laws and regulations are broad in scope and may extend to statements by servicers, such as KNA, that provide marketing or certain other services to such institutions. The laws and regulations may also apply to KNA's employees and agents, with respect to statements addressing the nature of an institution's programs, financial charges or the employability of its graduates. Additionally, failure to comply with these and other federal and state laws and regulations regarding misrepresentations and marketing practices could result in the imposition on KNA or its client institutions of fines, other sanctions or liabilities, including, without limitation, federal student aid repayment obligations to the ED, the termination or limitation on KNA's eligibility to provide services as a third-party servicer to Title IV participating institutions, the termination or limitation of a client institution's eligibility to participate in the Title IV programs, or legal action by students or other third parties. A violation of misrepresentation regulations or other federal or state laws and regulations applicable to the services KNA provides to its client institutions arising out of statements by KNA, its employees or agents could require KNA to pay the costs associated with indemnifying its client institutions from applicable losses resulting from the violation and could result in fines, other sanctions or liabilities imposed on KNA.

Compliance by client institutions with Title IV program requirements and other federal, state and accreditation requirements. KNA currently provides services to education institutions that are heavily regulated by federal and state laws and regulations and subject to extensive accrediting body requirements. Presently, a material portion of KNA's revenues is attributable to deferred purchase price and service fees it receives under the TOSA, which are dependent upon revenues generated by Purdue Global and dependent upon Purdue Global's eligibility to participate in the Title IV federal student aid program. To maintain Title IV eligibility, Purdue Global and KNA's other client institutions must be certified by the ED as eligible institutions, maintain authorizations by applicable state education agencies and be accredited by an accrediting commission recognized by the ED. Purdue Global and KNA's other client institutions must also comply with the extensive statutory and regulatory requirements of the Higher Education Act and other state and federal laws and accrediting standards relating to their financial aid management, educational programs, financial strength, disbursement and return of Title IV funds, facilities, recruiting practices, representations made by the school and other parties, and various other matters. Additionally, Purdue Global and other client institutions are subject to laws and regulations that, among other things, limit student default rates on the repayment of Title IV loans, permit borrower defenses to repayment of Title IV loans based on certain conduct of the institution, establish specific measures of financial responsibility and administrative capability, regulate the addition of new campuses and programs and other institutional changes; require compliance with state professional licensure board requirements to the extent applicable to institutional programs and require state authorization and institutional and programmatic accreditation. If the ED finds that Purdue Global or other client institutions have failed to comply with Title IV requirements or improperly disbursed or retained Title IV program funds, it may take one or more of a number of actions, including, but not limited to:

- fining the school;
- requiring the school to repay Title IV program funds;
- limiting or terminating the school's eligibility to participate in Title IV programs;
- initiating an emergency action to suspend the school's participation in Title IV programs without prior notice or opportunity for a hearing;
- transferring the school to a method of Title IV payment that would adversely affect the timing of the institution's receipt of Title IV funds;

- requiring the school to submit a letter of credit;
- denying or refusing to consider the school's application for renewal of its certification to participate in the Title IV programs or for approval to add a new campus or educational program; and
- referring the matter for possible civil or criminal investigation.

If Purdue Global or other client institutions lose or have limits placed on their Title IV eligibility, accreditation or state licensure, or if they are subject to fines, repayment obligations or other adverse actions due to their or KNA's noncompliance with Title IV regulations, accreditor or state agency requirements or other state or federal laws, KNA's financial results of operations could be adversely affected. After acquiring KU, on August 3, 2018, Purdue Global received an updated Provisional Program Participation Agreement (PPPA) from the ED which is necessary for continued participation in the federal Title IV programs after the change in ownership from Kaplan to Purdue. The PPPA expired on June 30, 2021, but continues in effect until the ED issues the final approved Program Participation Agreement. On October 15, 2021, Purdue Global received from the ED a new PPPA granting provisional certification until June 30, 2022. This PPPA was extended month to month until August 18, 2022, when the ED granted new provisional certification until June 30, 2024. Under this most recent PPPA, Purdue Global must apply for and receive approval for expansion or any substantial change before it may award, disburse or distribute Title IV funds based on the substantial change. Substantial changes generally include, but are not limited to: (a) establishment of an additional location; (b) increase in the level of academic offering beyond those listed in the institution's Eligibility and Certification Approval Report (ECAR); (c) addition of any educational program (including degree, non-degree or short-term training programs), or (d) the addition of any new degree program. In addition, the institution must pay any liabilities found in a currently open program review prior to the expiration of the PPPA. Purdue Global must also inform the ED on a quarterly basis of any governmental investigations involving the university as well as provide a summary of any student complaints. The provisional certification ends upon the ED's notification to the institution of the ED's decision to grant or deny a six-year certification to participate in the Title IV, Higher Education Act programs.

Compliance, regulatory actions, reviews and litigation. KNA and its client institutions are subject to reviews, audits, investigations and other compliance reviews conducted by various regulatory agencies and auditors, including, among others, the ED, the ED's Office of the Inspector General, accrediting bodies and state and various other federal agencies. These compliance reviews could result in findings of noncompliance with statutory and regulatory requirements that could, in turn, result in the imposition of fines, liabilities, civil or criminal penalties or other sanctions against KNA and its client institutions. Separately, if KNA provides financial aid services to more than one Title IV participating institution (i.e., one or more participating institutions in addition to Purdue Global), it will be required to arrange for an independent auditor to conduct an annual Title IV compliance audit of KNA's compliance with applicable ED requirements. KNA's client institutions are also required to arrange for an independent auditor to conduct an annual Title IV compliance audit of their compliance with applicable ED requirements, including requirements related to services provided by KNA.

On May 6, 2021, Kaplan received a notice from the ED that it would be conducting a fact-finding process pursuant to the borrower defense to repayment (BDTR) regulations to determine the validity of more than 800 BDTR claims and a request for documents related to several of Kaplan's previously owned schools. Beginning in July 2021, Kaplan started receiving the claims and related information requests. In total, Kaplan received 1,449 borrower defense applications that seek discharge of approximately $35 million in loans, excluding interest. Most claims received are from former KU students. The ED's process for adjudicating these claims is subject to the borrower defense regulations including those finalized in 2022 and effective July 1, 2023, but it is not clear to what extent the ED will exclude claims based on the underlying statutes of limitations, evidence provided by Kaplan, or any prior investigation related to schools attended by the student applicants. Compared to the previous rule, the new rule in part, expands actions that can give rise to claims for discharge; provides that the borrower's claim will be presumed true if the institution does not provide any responsive evidence; provides an easier process for group claims; and relies on current program review penalty hearing processes for discharge

recoupment. Under the rule, the recoupment process applies only to loans first disbursed after July 1, 2023; however, the discharge process and standards apply to any pending application regardless of loan date. Kaplan believes it has defenses that would bar any student discharge or school liability including that the claims are barred by the applicable statute of limitations, unproven, incomplete and fail to meet regulatory filing requirements. Kaplan expects to vigorously defend any attempt by the ED to hold Kaplan liable for any ultimate student discharges and has responded to all claims with documentary and narrative evidence to refute the allegations, demonstrate their lack of merit, and support the denial of all such claims by the ED. If the claims are successful, the ED may seek reimbursement for the amount discharged from Kaplan. If the ED initiates a reimbursement action against Kaplan following approval of former students' BDTR applications, Kaplan may be subject to significant liability. In November 2022 the Northern District of California approved the settlement agreement in the lawsuit *Sweet v. Cardona*. The Plaintiffs in that lawsuit claimed that the ED failed to properly consider and decide pending BDTR claims. As part of the settlement, the ED agreed to discharge loans of borrowers who attended 150 specific schools, including all schools formerly owned by Kaplan, and who had BDTR claims pending as of the June 22, 2022 settlement execution date. This discharge will likely cover each of the 1,449 applications the ED sent to Kaplan and to which Kaplan responded. The ED and the Court made clear that these discharges as part of a settlement are not determinations that the pending BDTR claims are valid and the fact of the settlement discharge cannot be used as evidence of any determination of wrongdoing by the institutions. However, despite the fact that the loans are discharged per the settlement, the ED may still attempt to separately adjudicate the associated BDTR claims and follow the regulatory process for seeking recoupment from the institutions for such claims.

In addition, Kaplan could be the subject of future compliance reviews or lawsuits related to formerly owned KU and KHE schools in connection with the pre-sale conduct of such schools that could result in monetary liabilities or fines or other sanctions against Kaplan.

Kaplan North America Supplemental Education

In 2022, KNA's Supplemental Education included all products of the former KTP and KP segments, including exam preparation, professional licensure and certification, and corporate training and continuing education. KNA offers a wide array of programs and services across various markets focusing on lifetime value creation and professional lifecycles. These markets are discussed below.

In 2022, KNA served over 835,000 students through its exam preparation, professional licensure and certification, and corporate training and continuing education programs and related products (such as tutoring, online question banks and online practice tests), excluding sales of test prep books by third-party retailers. Since the end of the first quarter of 2020, virtually all KNA exam preparation programs have been offered online, typically in a live online classroom or a self-study format, while some programs have continued in person. Private tutoring services are provided online. In 2022, KNA served approximately 3,200 business-to-business clients, including approximately 154 Fortune 500 companies.

Pre-college and Social Sciences. KNA provides exam preparation for high school and graduate students under the Kaplan Test Prep, Manhattan Prep and Barron's Educational Series brands for a broad range of standardized, high-stakes tests, including the SAT, ACT, GMAT and GRE. KNA also provides admissions consulting, tutoring and other advisory services.

Healthcare. KNA provides exam preparation for the medical college admissions test (MCAT) and professional licensure exam preparation for physicians (USMLE), nurses (NCLEX), pharmacists (NAPLEX), dentists (NBDE) and physician assistants (PANCE). Under the brand i-Human Patients, KNA offers online, simulated patient interaction training for medical health professionals, which is typically purchased by medical, nursing and physician assistant schools. KNA's USMLE in-person programs are accredited and Student and Exchange Visitor Program (SEVP) approved for F-1 students and operate under the Kaplan Medical Prep brand. In 2021, KNA acquired a continuing medical education business for physicians, nurses and pharmacists which is

accredited by Joint Accreditation for Interprofessional Continuing Education and operated under the brand Projects in Knowledge.

Legal and Government. KNA offers exam preparation for the law school admissions test (LSAT) and state bar licensure exam preparation for lawyers in 50 jurisdictions through Kaplan Bar Review and Preliminary Multistate Bar Review (PMBR). For the military, KNA offers the Armed Services Vocational Aptitude Battery (ASVAB) that measures developed abilities and helps predict future academic and occupational success in the military and offers practice test questions for Navy advancement exams on a subscription basis through Bluejacketeer.

Business and Financial. Professional licensure products are operated under the brands Dearborn Real Estate Education, Kaplan Real Estate Education, Bob Hogue School of Real Estate, Kaplan Financial Education and Kaplan Schweser. KNA helps professionals obtain certifications, licenses and designations to enable them to advance their careers. Additionally, KNA collaborates with organizations to solve their talent management challenges through customized corporate learning and development solutions. Through live and online instruction, KNA provides professional license test preparation, licensing and continuing education, as well as leadership and professional development programs to businesses and individuals in the accounting, insurance, securities, real estate, financial services and wealth management areas.

Technology and Engineering. KNA offers licensing exam preparation for engineers, architects and designers under the brand name PPI. At the end of 2022, KNA ceased offering data science and analytics bootcamps to new cohorts and the last cohort graduated at the end of January 2023.

Publishing. Kaplan Publishing focuses on Kaplan Test Prep, Barron's, and Manhattan Prep test preparation and reference resources sold through retail channels. At the end of 2022, Kaplan Publishing had 1,171 products available in print and digital formats, including 352 digital products.

TELEVISION BROADCASTING

Graham Media Group, Inc. (GMG), a subsidiary of the Company, owns seven television stations located in Houston, TX; Detroit, MI; Orlando, FL; San Antonio, TX; Jacksonville, FL; and Roanoke, VA, as well as SocialNewsDesk, a provider of social media management tools designed to connect newsrooms with their users. The following table sets forth certain information with respect to each of the Company's television stations:

Station, Location and Year Commercial Operation Commenced	National Market Ranking [(a)]	Primary Network Affiliation	Expiration Date of FCC License	Expiration Date of Network Agreement	Total Commercial Stations in DMA [(b)]
KPRC, Houston, TX, 1949	7th	NBC	Aug. 1, 2030	Dec. 31, 2025	14
WDIV, Detroit, MI, 1947	14th	NBC	Oct. 1, 2029	Dec. 31, 2025	9
WKMG, Orlando, FL, 1954	17th	CBS	Feb. 1, 2029	June 30, 2026	14
KSAT, San Antonio, TX, 1957	31st	ABC	Aug. 1, 2030	March 31, 2026	11
WJXT, Jacksonville, FL, 1947	41st	None	Feb. 1, 2029	—	7
WCWJ, Jacksonville, FL, 1966	41st	CW	Feb. 1, 2029	Aug. 31, 2025	7
WSLS, Roanoke, VA, 1952	71st	NBC	Oct. 1, 2028	Dec. 31, 2025	7

(a) Source: 2022/2023 Local Television Market Universe Estimates, the Nielsen Company, November 2022 and effective January 1, 2023, based on television homes in DMA (see note (b) below).

(b) Full-power commercial TV stations, Designated Market Area (DMA) is a market designation of the Nielsen Company that defines each television market exclusive of another, based on measured viewing patterns.

Revenue from broadcasting operations is derived primarily from the sale of advertising time to local, regional and national advertisers. In 2022, advertising revenue accounted for 54.8% of the total for GMG's operations.

Advertising revenue is sensitive to a number of factors, some specific to a particular station or market and others more general in nature. These factors include a station's audience share and market ranking; seasonal fluctuations in demand for airtime; annual or biannual events, such as sporting events and political elections; and broader economic and other market trends, including alternative advertising platforms, among others.

Regulation of Broadcasting and Related Matters

GMG's television broadcasting operations are subject to the jurisdiction of the U.S. Federal Communications Commission (FCC) under the U.S. Federal Communications Act of 1934, as amended (the Communications Act). Each GMG television station holds an FCC license that is renewable upon application for an eight-year period. As shown in the table above, the current terms of the GMG station licenses expire in 2028 through 2030. GMG expects the FCC to grant future renewal applications for its stations in due course, but cannot provide any assurances that the FCC will do so.

Digital Television (DTV) and Spectrum Issues. Each GMG station (and each full-power television station nationwide) broadcasts only in a digital format, which allows transmission of HDTV programming and multiple channels of standard-definition television programming (multicasting).

Television stations may receive interference from a variety of sources, including interference from other broadcast stations, that is below a threshold established by the FCC. That interference could limit viewers' ability to receive television stations' signals. The amount of interference received by television stations could increase in the future because of the FCC's decision to allow electronic devices, known as "white space" devices, to operate in the television frequency band on an unlicensed basis on channels not used by nearby television stations.

In November 2017, the FCC voted to adopt rules authorizing broadcast television stations to voluntarily transition to a new technical standard, called Next Generation TV or ATSC 3.0. The new standard is designed to allow broadcasters to provide consumers with better sound and picture quality; hyper-localized programming, including news and weather; enhanced emergency alerts and improved mobile reception. The standard allows for the use of targeted advertising and more efficient use of spectrum, for example, by allowing for more multicast streams to be aired on the same six-megahertz channel. ATSC 3.0 is not backward compatible with existing television equipment, and the FCC's rules require full-power television stations that transition to the new standard to continue broadcasting a signal in the existing DTV standard until the FCC phases out the requirement in a future order. A transitioning station's DTV-formatted content must be substantially similar to the programming aired on its ATSC 3.0 channel until July17, 2023, five years from the date the rules in the original 2017 FCC order were finalized. In June 2022, the FCC opened a proceeding to determine whether to retain or extend the July 2023 sunset date. The FCC has not yet taken action in that proceeding.

GMG launched its first ATSC 3.0 stream in December 2020 for station WDIV-TV in Detroit; prior to the launch, WDIV-TV had applied for and was granted authority by the FCC to effectuate an ATSC 3.0 simulcasting arrangement with WMYD (licensed to Scripps Broadcasting Holdings, LLC) in the Detroit area. In 2021, two GMG stations each entered into simulcasting arrangements. First, in June 2021, GMG station WKMG-TV (Orlando) applied for and was granted authority by the FCC to effectuate an ATSC 3.0 simulcasting arrangement with another station in the Orlando area (WRBW-DT, licensed to Fox Television Stations, LLC). The station's ATSC 3.0 stream was then launched along with the rest of the market on June 30, 2021. Second, in November 2021, GMG station KPRC-TV (Houston) applied for and was granted authority by the FCC to effectuate an ATSC 3.0 simulcasting arrangement with another station in the Houston area (KIAH, licensed to Tribune Media Company). The station's ATSC 3.0 stream was launched on December 2, 2021. Further, on September 2022, WSLS-TV (Roanoke) applied for and was granted authority by the FCC to effectuate an ATSC 3.0 simulcasting arrangement with WSET-TV (Sinclair ABC), WDBJ (Gray Television CBS), WWCW (Nexstar Fox) and WZBJ (Gray Television MyNetwork) in the Roanoke market. As required by the FCC rules, each of the respective stations' ATSC 3.0 streams is in addition to such station's current DTV stream, which viewers continue to be able to view.

In connection with the transition to ATSC 3.0, which is an internet protocol-based standard, the FCC has updated its rules to reflect how broadcasters may use their spectrum in non-traditional ways (Broadcast Internet). In June 2020, the FCC issued a Declaratory Ruling clarifying that the television ownership rules would not apply to the lease of broadcast spectrum for Broadcast Internet purposes, and in December 2020, the FCC voted to adopt rules that specifically apply its existing framework regarding derogation of service and use of spectrum for ancillary and supplementary purposes to Broadcast Internet; i.e., a broadcaster must continue to air at least one free, over-the-air television signal in SDTV format, and if a broadcaster opts to use its spectrum for Broadcast Internet services, it will incur a five percent fee based on the gross revenue received by the broadcaster. It is too soon to predict how the use of broadcast spectrum for Broadcast Internet services could impact the industry.

In April 2017, the FCC announced the completion of an incentive auction in which certain broadcast television stations bid to relinquish spectrum or move to a different spectrum band in exchange for a share of the revenues obtained by auctioning the reallocated broadcast spectrum for use by wireless broadband providers**.** None of GMG's stations participated in the incentive auction. However, certain GMG stations–specifically, WDIV, WSLS, WCWJ and WJXT–were required to move to new channel allotments in order to free up a nationwide block of spectrum for wireless broadband use. The FCC adopted rules requiring this "repacking" of broadcast television stations to new channels to be completed within 39 months after the incentive auction closed, with earlier deadlines set for particular stations in order to stagger the transition to new channels. The WSLS transition was completed on September 11, 2019, the WCWJ and WJXT transitions were completed on January 16, 2020 and the WDIV transition was completed on September 16, 2020 (following tolling of its assigned deadline due to delays related to the COVID-19 pandemic).

GMG's repacked stations have been eligible to seek reimbursement for repacking-related costs and have been receiving reimbursement payments through the FCC's process. Congress has capped the overall funds available for repack-related reimbursements. The initial legislation authorizing the incentive auction provided only $1.75 billion in total for all such reimbursements. Congress later made available an additional $1 billion in reimbursement funds, with $600 million in available funds allocated to 2018 and $400 million allocated to 2019.

To date, each repacked commercial television station, including each of the repacked GMG stations, has been allocated a reimbursement amount equal to approximately 94% of the station's estimated repacking costs, as verified by the FCC's fund administrator. Receipt of the allocated funds is subject to FCC approval of particular requests for reimbursement of actual costs fully incurred. By October 8, 2021, stations that transitioned in the first half of the 39-month post-auction repack had to submit all remaining invoices for incurred expenses. WSLS, which transitioned in the first half of the post-auction repack, complied with this deadline. The remaining GMG stations submitted all remaining invoices in compliance with the March 22, 2022 deadline.

In March 2020, the FCC announced the reformation of the 3.7-4.2 GHz band (C-band) through a public auction of the lower 280 megahertz of these frequencies (3.7-3.98 GHz). This auction, which concluded February 2021, allows winning bidders to use the 3.7-3.98 GHz frequencies for wireless broadband services. However, this spectrum reallocation requires the relocation of incumbent C-band satellite operations—including those used to deliver programming to television stations–to a "repacked" 4.0-4.2 GHz band. In exchange for a portion of the auction proceeds, satellite operators have chosen to relocate their operations pursuant to an "accelerated" relocation timeline.

GMG's television stations receive programming from the relocating satellite operators, which requires the transition of operations at GMG stations through the installation of antenna filters, repointing and retuning of antennas, and other activities. Although GMG elected to have the satellite operators manage these transition efforts, GMG coordinated with the satellite operators and submitted various filings to the FCC to confirm the transition eligibility of its stations and ensure the stations remain protected from harmful interference post-transition.

The first phase of the "accelerated" C-band transition concluded December 5, 2021, and the deadline for the second phase is December 5, 2023. GMG anticipates that the satellite operators and the FCC may request additional information about GMG's stations to complete the second phase of the transition.

The FCC is considering whether to allow unlicensed devices to operate in other bands of spectrum used by broadcast television stations, including the 6 GHz and 13 GHz bands, which are used for electronic news gathering and other broadcast auxiliary services. Broadcasters have urged the FCC to ensure that broadcast operations are protected against interference from unlicensed devices in these and other bands of spectrum. An FCC decision in any proceeding opening bands of spectrum to use by unlicensed devices could cause interference to certain operations of GMG's stations.

Carriage of Local Broadcast Signals. Congress has established, and periodically has extended or otherwise modified, various statutory copyright licensing regimes governing the local and distant carriage of broadcast television signals on cable and satellite systems. The Company cannot predict whether or how Congress may maintain or modify these regimes in the future, or what net effect such decisions would have on the Company's broadcast operations or on the Company overall.

The Communications Act and the FCC rules allow a commercial television broadcast station, under certain circumstances, to insist on mandatory carriage of its signal on cable systems serving the station's market area (must carry). Alternatively, stations may elect, at three-year intervals, to forgo must-carry rights and allow their signals to be carried by cable systems only pursuant to a "retransmission consent" agreement. Commercial television stations also may elect either mandatory carriage or retransmission consent with respect to the carriage of their signals on direct broadcast satellite (DBS) systems that provide "local-into-local" service (i.e., distribute the signals of local television stations to viewers in the local market area). Stations that elect retransmission consent may negotiate for compensation from cable and DBS systems in exchange for the right to carry their signals. Each of GMG's television stations has elected retransmission consent for both cable and DBS operators, and each is carried on all of the major cable and DBS systems serving each station's respective local market pursuant to retransmission consent agreements. Retransmission consent elections must be made every three years. The most recent election deadline was October 1, 2020; all GMG stations elected retransmission consent for both cable and DBS operators. The 2020 election process was simpler and less time-intensive than prior processes, as the FCC in July 2019 moved to an electronic election system that now allows broadcasters to post their carriage elections online and to send notices to covered MVPDs electronically. The next election deadline is October 1, 2023 and will follow the same process.

Recent statutory changes have required the FCC to modify its rules governing retransmission consent negotiations. The Television Viewer Protection Act, enacted on December 20, 2019, made changes to the "good faith" standards for retransmission consent negotiations, calling for the FCC to implement regulations requiring "large station groups" (groups of television broadcast stations that have a national audience reach of more than 20%) to negotiate in good faith with MVPD "buying groups" (entities that negotiate on behalf of multiple small MVPDs). GMG does not qualify as a "large station group" under the statute and therefore is not subject to this obligation. While GMG does not anticipate that these rules will materially affect its bargaining position in retransmission consent negotiations, if Congress or the FCC were to enact further changes to the retransmission consent rules (such as by requiring small station groups like GMG to negotiate with MVPD buying groups, mandating continued carriage of a station's signal by an MVPD during a retransmission consent dispute, or otherwise giving MVPDs heightened bargaining power), such changes could have a material effect on retransmission consent revenues.

In 2014, the FCC opened a proceeding to consider whether certain internet-based programming distribution services, called "virtual" MVPDs, should be classified as MVPDs and thus subject to the retransmission consent rules. The FCC has not yet taken action in that proceeding. Because the retransmission consent rules at present do not apply to virtual MVPDs such as YouTube TV and Hulu + Live TV, the broadcast networks negotiate agreements with virtual MVPDs that are presented to their affiliates as "opt-in" agreements, and local affiliates of the broadcast networks are unable to negotiate directly with virtual MVPDs to reach agreements for the carriage of their signals. Unless the FCC rules that virtual MVPDs should be classified as MVPDs, GMG may be unable to negotiate carriage agreements with these distribution services that include the payment of market-based retransmission fees.

The FCC has also considered proposals to alter its rules governing network non-duplication and syndicated exclusivity. Nearly nine years ago, in March 2014, the FCC solicited comments on a proposal to eliminate its network non-duplication and syndicated exclusivity rules, which restrict the ability of cable operators, direct broadcast satellite systems and other distributors classified by the FCC as MVPDs to import the signals of out-of-market television stations with duplicate programming during retransmission consent disputes or otherwise. The FCC has not acted on that proposal to date. If Congress or the FCC were to enact further changes to the exclusivity rules, such changes could materially affect the GMG stations' bargaining position in future retransmission consent negotiations.

Ownership Limits. The Communications Act and the FCC's rules limit the number and types of media outlets in which a single person or entity may have an attributable interest. The FCC is required by statute to review its media ownership rules (with the exception of the national television ownership rule, discussed below) every four years to determine whether those rules remain necessary in the public interest as the result of competition. This process is referred to as the quadrennial review. In November 2017, the FCC conducted such a review and voted to eliminate certain of its ownership limit restrictions and to modify others. This FCC decision was challenged in court, and the Third Circuit Court of Appeals set aside the FCC's decision in November 2019. However, the FCC appealed the Third Circuit court's decision, and on April 1, 2021, the U.S. Supreme Court reversed that decision. This means that the current media ownership rules reflect the November 2017 changes. The current ownership rule most relevant to GMG is the local television ownership rule. The rule prohibits one broadcaster from owning (or having an attributable interest in) two full-power television stations licensed to the same Nielsen DMA if both of them are ranked among the top four stations in the market, unless the broadcaster can demonstrate to the FCC that the combination serves the public interest. Ownership of more than two top-four, full-power television stations is generally prohibited.

Prior to the decisions of the Third Circuit and Supreme Court, the FCC initiated a quadrennial review of its media ownership rules in December 2018. That proceeding remains open. In June 2021, the FCC solicited comments to refresh the record following the Supreme Court decision that effectively reinstated the November 2017 rule changes, but no action has been taken in that proceeding to date.

On December 22, 2022, the FCC initiated the most recent quadrennial review of its media ownership rules, including the local television ownership rule. The FCC has invited comments that address changes in the media marketplace, technological developments and public interest considerations relevant to the media ownership rules, among others. GMG's ability to enter into certain transactions in the future may be affected by the resolution of the 2022 and/or 2018 FCC quadrennial review proceedings.

Under the national television ownership rule, a single person or entity may have an attributable interest in an unlimited number of television stations nationwide, as long as the aggregate audience reach of such stations does not exceed 39% of nationwide television households and as long as such interest complies with the FCC's other ownership restrictions. In 2016, the FCC eliminated the 50% Ultra High Frequency (UHF) discount, under which stations broadcasting on UHF channels are credited with only half the number of households in their market for purposes of calculating compliance with the 39% cap. However, the FCC reversed that decision in early 2017, concluding that the UHF discount should not be altered except in connection with a broader review of the national ownership cap. The reinstatement of the UHF discount was upheld by the D.C. Circuit in the summer of 2018. In December 2017, the FCC initiated a rule-making proceeding seeking comments regarding its authority to modify or eliminate the national television ownership cap, which was set at 39% by statute, as well as the potential elimination of the UHF discount. That proceeding remains open.

Programming. Six of GMG's seven stations are affiliated with one or more of the national television networks that provide a substantial amount of programming to their television station affiliates. The expiration dates of GMG's affiliation agreements are set forth at the beginning of this Television Broadcasting section. WJXT, one of GMG's Jacksonville stations, has operated as an independent station since 2002. In addition, each of the GMG stations receives programming from syndicators and other third-party programming providers. GMG's

performance depends in part on the quality and availability of third-party programming broadcast by its stations, and any substantial decline in the quality or availability of this programming could materially affect the ability of GMG and its competitors to attract viewers, generate advertising revenues or enter into certain transactions in the future.

Public Interest Obligations. To satisfy FCC requirements, stations generally are expected to air a specified number of hours of programming intended to serve the educational and informational needs of children and to complete reports on a quarterly basis concerning children's programming. In July 2019, the FCC modified these rules to provide broadcasters with more flexibility in meeting the public interest obligations. Among other things, these rules allow up to 52 hours per year of children's programming to consist of educational specials and/or short-form programming. The prior rules required all qualifying programming to be regularly scheduled and aired in 30-minute blocks. While stations are required to air the substantial majority of their educational and informational children's programming on their primary program stream, under the current rules they may now air up to 13 hours per quarter of regularly scheduled weekly programming on a multicast stream. In addition, the FCC requires stations to limit the amount of advertising that appears during certain children's programs.

Other FCC regulations and policies ensure that broadcast licensees operate in the public interest, including rules requiring the disclosure of certain information and documents in an online public inspection file; rules requiring the closed-captioning of programming to assist television viewing by the hearing impaired; video description rules to assist television viewing by the visually impaired; rules concerning the captioning of video programming distributed via the internet; rules governing the broadcast of emergency alerts, and rules concerning the volume of commercials. Compliance with these rules imposes additional costs on the GMG stations that could affect GMG's operations.

Political Advertising. The FCC regulates the sale of advertising by GMG's stations to candidates for public office and imposes other obligations regarding the broadcast of political announcements more generally, including the disclosures of certain information related to such advertising in the station's online public inspection file. The application of these regulations may limit the advertising revenues of GMG's television stations during the periods preceding elections. Failure to comply with the political advertising rules may result in enforcement actions by the FCC. The Company has procedures in place regarding compliance with the FCC's political advertising rules, but cannot predict how the FCC's future application of these rules will affect GMG's stations.

Broadcast Indecency. The FCC's policies prohibit the broadcast of indecent and profane material during certain hours of the day, and the FCC may impose monetary forfeitures when it determines that a television station has violated that policy. Broadcasters have repeatedly challenged these rules in court, arguing, among other things, that the FCC has failed to justify its indecency decisions adequately, that the FCC's policy is too subjective to guide broadcasters' programming decisions and that its enforcement approach otherwise violates the First Amendment. In June 2012, the U.S. Supreme Court held that certain fines against broadcasters for "fleeting expletives" and "fleeting nudity" were unconstitutional because the FCC failed to provide clear, advance notice to broadcasters of what the FCC deemed to be indecent, but it also upheld the FCC's general authority to regulate broadcast decency. The Company cannot predict how GMG's stations may be affected by the FCC's current or future interpretation and enforcement of its indecency policies.

Other Matters. In addition to the matters described above, the FCC is conducting proceedings concerning various other matters, the outcome of which could adversely affect the profitability of GMG's television broadcasting operations.

MANUFACTURING

Hoover Treated Wood Products, Inc.

Hoover Treated Wood Products, Inc. (Hoover) is a supplier of pressure impregnated kiln-dried lumber and plywood products for fire-retardant and preservative applications. Hoover, founded in 1955 and acquired by the

Company in 2017, is headquartered in Thomson, GA. It operates 10 facilities across the country and services a stocking distributor network of more than 100 locations spanning the U.S. and Canada.

Group Dekko Inc.

Group Dekko Inc. (Dekko) is an electrical solutions company that focuses on innovative power charging and data systems; industrial and commercial indoor lighting solutions; and the manufacture of electrical components and assemblies for medical equipment, transportation, industrial and appliance products. Dekko, founded in 1952, is headquartered in Fort Wayne, IN, and operates 11 facilities in four states and Mexico.

Joyce/Dayton Corp.

Joyce/Dayton Corp. (Joyce/Dayton) is a leading manufacturer of screw jacks, linear actuators and related linear motion products and lifting systems in North America. Joyce/Dayton provides its lifting and positioning products to customers across a diverse range of industrial end markets, including renewable energy, metals and metalworking, oil and gas, satellite antennae and material handling sectors.

Forney Corporation

Forney Corporation (Forney) is a global supplier of burners, igniters, dampers and controls for combustion processes in electric utility and industrial applications. Forney is headquartered in Addison, TX, and its manufacturing plant is in Monterrey, Mexico. Forney's customers include power plants and industrial systems around the world.

HEALTHCARE

Graham Healthcare Group

Graham Healthcare Group (GHG) provides home health, hospice and palliative services to approximately 70,000 patients annually. GHG operates 18 home health, 10 hospice and four palliative care operating units in Michigan, Illinois, Pennsylvania, Kansas, Missouri, Ohio and Florida. Sixteen of GHG's 32 operating units are operated through joint ventures with health systems and physician groups. The remainder are wholly owned and operated under the "Residential" brand name. Home health services include a wide range of health and social services delivered at home to recovering, disabled or chronically ill persons in need of medical, nursing, social or therapeutic treatment and assistance with the essential activities of daily living. Hospice care focuses on relieving symptoms and supporting terminally ill patients with a life expectancy of six months or less. Hospice care involves an interdisciplinary approach to the provision of medical care, pain management and emotional and spiritual support, with an emphasis on comfort, not curing. Hospice services can be provided in the patient's home, as well as in free-standing hospice facilities, hospitals, nursing homes and other long-term care facilities. Palliative care is a specialized form of medicine provided by nurse practitioners that aims to enhance the quality of life of patients who are faced with serious illness and their families. It focuses on increasing comfort through prevention and treatment of distressing symptoms. In addition to expert symptom management, palliative care focuses on clear communication, advance planning and coordination of care. Each GHG operating unit offers care coordination, healthcare solutions and clinical expertise. All home health and hospice operations are Medicare certified and accredited by the Accreditation Commission for Health Care (ACHC) or are in the process of being ACHC accredited. GHG derives 90% of its revenues for home health and hospice services from Medicare. The remaining sources of revenue are from Medicaid, commercial insurance and private payors.

GHG also operates a nationwide specialty pharmacy licensed in 38 states that serves patients suffering from chronic illness through its Clinical Specialty Infusions, LLC (CSI Pharmacy) business located in Texarkana, Texas. CSI Pharmacy specializes in treating rare diseases with biologics and plasma-derived therapies, with revenues derived primarily from intravenous immunoglobulin (IVIG) therapy. CSI Pharmacy delivers products

to patients' homes and employs nurses to provide specialized infusion therapies on a monthly basis. Through its Clarus Care, LLC (Clarus) business in Nashville, Tennessee, GHG provides call management solutions to physician groups and hospitals. Clarus replaces traditional human-staffed answering services with a SaaS-based solution. Clarus streamlines calls, eliminates patient hold times, and manages referrals and new appointments. The solution eliminates delays, call routing errors and malpractice risk inherent with traditional call centers. Through Weiss Medical, GHG operates a full-service physician practice based in Riverdale, New Jersey. Weiss has expertise in all allergic and immunologic conditions, and specializes in challenging cases. The practice also offers infusion services.

In 2022, GHG acquired two businesses, The Skin Clique and Surpass Behavioral Health. The Skin Clique is a physician-led provider of at-home dermatology and professional aesthetics based in Charleston, South Carolina serving private clients in over 20 states. The Skin Clique generates a majority of its revenue from Botox and Xeomin, and the remaining revenue from skin peels, Ultherapy, lip and face fillers, and skin care subscription boxes. The Skin Clique utilizes approximately 150 licensed nurse practitioner and physician assistant providers that develop clients via their personal network. Ray Beyond Behavioral Corporation, dba Surpass Behavioral Health, is a multi-state provider of Applied Behavior Analysis (ABA) clinics headquartered in Nashville, Tennessee. Surpass Behavioral Health operates approximately 28 ABA clinics with 449 clinicians and 37 back-office employees throughout Kentucky, South Carolina, Georgia, Pennsylvania and Florida as well as a school program in Pennsylvania and a community living program in Kentucky. The majority of its revenue is center-based, with a smaller portion from school settings, and the remaining from telehealth and adult programs.

AUTOMOTIVE

Graham Automotive LLC

The Company owns a 90% interest in six automotive dealerships in the Washington, D.C. area: Honda of Tysons Corner in Virginia, Lexus of Rockville in Maryland, Jeep in Bethesda, Maryland, Ford of Manassas in Virginia, and in July 2022, the Company acquired a 90% interest in two dealerships in Woodbridge, VA, a Toyota dealership and a Chrysler-Dodge-Jeep-Ram dealership. The Company has a management services agreement with an entity affiliated with Christopher J. Ourisman, a member of the Ourisman Automotive Group family of dealerships, to operate and manage the operations of the dealerships. The Company also owns CarCare To Go, which provides valet repair services to and from a network of dealership service centers in the Washington, D.C. area.

OTHER ACTIVITIES

Leaf Group Ltd.

In June 2021, the Company acquired Leaf Group Ltd. (Leaf), headquartered in Santa Monica, California. Leaf is a diversified consumer internet company that builds creator-driven brands in lifestyle and home and art design categories. Through its Society6 Group, Leaf operates leading art and design marketplaces where large communities of artists and designers can market and sell their original art and designs printed on a wide variety of products. Its made-to-order marketplaces, consisting of Society6.com (Society6) and its wholesale channel (collectively, Society6 Group), provide artists and designers with an online commerce platform to feature and sell their original art and designs on an array of consumer products primarily in the home décor category. Society6 Group's wholesale channel sells products to trade and hospitality clients, as well as retail distribution partners. Through Leaf's Saatchi Art Group, including SaatchiArt.com (Saatchi Art) and its art fair event brand, The Other Art Fair, Leaf provides an online art gallery where a global community of artists exhibit and sell their original artwork directly to consumers through a curated online gallery, virtual reality or in-person at art fairs hosted in the United Kingdom, Australia and the U.S. Saatchi Art's online art gallery features a wide selection of original paintings, drawings, sculptures and photography. Leaf's Media Group consists of a diverse portfolio of media properties that educate and inform consumers across a wide variety of life topics, including fitness and wellness brands such as Well+Good and Livestrong.com, Hunker in the home and design space and Only In Your

State in the travel sector. Together with these premium brands, Leaf owns and operates or hosts and operates over 45 websites focused on specific categories or interests. Leaf generates the majority of its media revenue from the sale of advertising.

Clyde's Restaurant Group

In July 2019, the Company acquired Clyde's Restaurant Group (Clyde's). Clyde's, founded in 1963, owns and operates 11 restaurants and entertainment venues in the Washington, D.C. metropolitan area, including six Clyde's locations, Old Ebbitt Grill, The Hamilton, 1789 Restaurant, Fitzgerald's and The Tombs.

Framebridge, Inc.

Framebridge provides high-quality, affordable and fast custom framing directly to consumers. Through its website, app and retail locations, Framebridge offers consumers the option to drop off or ship artwork, pictures and other personal objects directly to Framebridge to be custom framed and then delivered directly to a customer or a retail store for in-store pick up. Framebridge is headquartered in Washington, D.C., has five retail locations in the Washington, D.C./Maryland/Northern Virginia market, five locations in Manhattan and Brooklyn, NY, one in Hoboken, NJ, three in Chicago, two in Atlanta, GA, two in Boston, one in Philadelphia, and two manufacturing facilities in Kentucky and New Jersey.

Code3

Code3 is a marketing and insights company that manages digital advertising for global brands and early-stage companies. It delivers media, creative and data services to transform consumer and performance data into planning, content, media activation and measurement to maximize ROI. Code3 works across platforms such as Facebook, Instagram, Amazon, Google, Twitter, Pinterest, Snapchat and YouTube. The legacy business surrounding the Audience Intelligence Platform has been operated since the beginning of 2021 as a separate software company under the name, Decile LLC. "Code3" is the trade name of Social Code, LLC and Marketplace Strategy, LLC.

Decile LLC

Decile LLC (Decile) is a customer data and analytics software company that helps marketers extract value from their proprietary first-party customer and sales data. Decile provides software and services to help its business clients better understand customer personas, customer acquisition and retention, product analytics and how to increase profitable growth**.**

The Slate Group LLC

The Slate Group LLC (Slate) publishes *Slate*, an online magazine. *Slate* features articles and podcasts analyzing news, politics and contemporary culture and adds new material on a daily basis. Content is supplied by the magazine's own editorial staff, as well as by independent contributors. As measured by The Slate Group, *Slate* had an average of more than 15 million unique visitors per month and averaged more than 42 million page views per month across desktop and mobile platforms in 2022. The Slate Group owns an interest in E2J2 SAS, a company incorporated in France that produces two French-language news magazine websites at *slate.fr* and *slateafrique.com*. The Slate Group provides content, technology and branding support.

Pinna LLC

Pinna LLC (Pinna) is an audio-first children's media company offering an on-demand subscription service that delivers curated audio programming for children, all in one place, including podcasts, audio shows, audiobooks and music. The service offers children an ad-free, screen-free way to play and listen. Pinna creates and produces award-winning, original shows and partners with best-in-class brands and top creative talent to deliver age-appropriate, high-quality, highly entertaining audio experiences for three- to 12-year-olds.

The FP Group

The FP Group produces *Foreign Policy* magazine and the *ForeignPolicy.com* website, which cover developments in national security, international politics, global economics and related issues. The site features blogs, unique news content, specialized channels and newsletters, and podcasts focusing on regions and topics of interest. The FP Group provides insight and analysis into global affairs for government, military, business, media and academic leaders. FP Events also produces a growing number of live and virtual events, bringing together government, military, business and investment leaders to discuss important regional and topical developments and their implications.

City Cast LLC

City Cast LLC (City Cast) is a network of daily local news podcasts in cities around the country, accompanied by a daily email newsletter about local communities, including local news, events and places. Currently City Cast is available in Chicago, Denver, Houston, Salt Lake City, Pittsburgh, D.C., Madison, Portland, Philadelphia, Las Vegas and Boise.

COMPETITION

Kaplan

Kaplan's businesses operate in fragmented and competitive markets. Each of KI's businesses competes in disaggregated markets with other for-profit institutions and companies (ranging in size from large for-profit universities to small competitors offering English-language courses) and, in certain instances, with government-supported schools and institutions that provide similar training and educational programs. Competitive factors vary by business and include program offerings, ranking of university partners, convenience, quality of instruction, reputation, placement rates, student services and cost. KI derives its competitive advantage from, among other things, delivering high-quality education and training experiences to students, having name brand recognition across multiple markets, developing strong relationships with corporate clients and recruitment partners and offering competitive pricing. KNA competes with companies that provide various education technology solutions, consumer test and licensure preparation and course delivery, corporate training, university administrative support for online programs and courses, curriculum development, overall online program development and analytics for colleges and universities, as well as support for corporate, employer and employee education programs. The market for KNA's services and products, and especially its higher education services and products, is dynamic and rapidly evolving, and several competitors offer a mix of some of the same products and services or are seeking to move into the markets in which KNA operates. Competitive factors in these KNA markets include 1) the ability to deliver a wide range of educational services and programs to clients across all levels of programs and administrative functions; 2) cost effectiveness; 3) expertise in marketing, recruitment and program delivery; 4) student outcomes and satisfaction; 5) the ability to invest in start-up and scaling initiatives; 6) reputation; and 7) compliance with laws and the ability to navigate complex regulatory requirements. KNA's ability to effectively compete in the higher education services markets will depend in large part on its successful delivery and navigation of these factors. While the competitive landscape is expanding, KNA's resources, capabilities and experience are key differentiators in the market. Similarly, KNA's supplemental education products and services compete with a wide range of national, regional, local, online and location-based competitors. Competitors vary by test, with many focused on preparing students for a single high-stakes test. For its curricular and assessment services, KNA has a number of national competitors as well as competitors focused on preparation for particular tests. Competitive factors for the supplemental education products vary by product line and include price, features, modality, schedule and reputation. Although KNA faces intense competition and shifting consumer preferences in these areas, particularly with respect to online test preparation, where some new competitors are offering lower-cost and free test preparation products, KNA, and particularly Kaplan Test Prep, remains a leading name in test preparation owing in part to its technical expertise and capabilities, quality of instructors, content, curricula, longevity and reputation in the industry. KNA's professional licensure training and preparation and corporate training products and services offer a broad portfolio of products, many within highly

regulated and mature industries, including securities, insurance, real estate and wealth management, where competition includes a wide variety of national, regional and local companies seeking the same market share and resulting in deep price discounting and commoditization of offerings.

Graham Media Group

GMG competes for audiences and advertising revenues with television and radio stations, cable systems, video services offered by telephone and broadband companies serving the same or nearby areas, DBS services, digital media services, and, to a lesser degree, with other media providers, such as newspapers and magazines. Cable systems operate in substantially all of the areas served by the Company's television stations, where they compete for television viewers by importing out-of-market television signals; by distributing pay-cable, advertiser-supported and other programming that is originated for cable systems; and by offering movies and other programming on an on-demand, digital or pay-per-view basis. In addition, DBS services provide nationwide distribution of television programming, including pay-per-view programming and programming packages unique to DBS, using digital transmission technologies. Moreover, to the extent that competing television stations in the Company's television markets transition to ATSC 3.0, such stations may pose an increased competitive challenge to the Company's stations in the future, such as by offering an increased number of multicast channels or by offering advanced features.

Competition continues to increase from established and emerging online distribution platforms. Movies and other video programming increasingly are available on an on-demand basis through a variety of online platforms, which include free access on the websites and apps of the major TV networks, ad-supported viewing on platforms such as Hulu, and subscription-based access through services such as Netflix. In addition, online-only subscription services offering live television services have been launched both by traditional pay-TV competitors (such as DISH and DirecTV) and newer entrants (such as YouTube TV and Fubo). The Company has entered into agreements for some of its stations to be distributed via certain of these services, typically through opt-in agreements negotiated by the stations' affiliated networks. Participation in these services has given the Company's stations access to new distribution platforms. At the same time, competition from these various platforms could adversely affect the viewership of the Company's television stations via traditional platforms and/or the Company's strategic position in negotiations with pay-TV services. In addition, the networks' increased role in negotiating online distribution arrangements for their affiliated stations, together with the networks' imposition of higher fees on affiliated stations in exchange for broadcast and traditional pay-TV retransmission rights, may have broader effects on the overall network-affiliate relationship, which the Company cannot predict.

Hoover

Hoover's predominant product line is fire-retardant treated wood products for building interior applications that are specified by architects in accordance with building code requirements for multi-family residential, commercial and institutional nonresidential buildings. Hoover's fire-retardant product lines are sold through a stocking distributor network of more than 100 locations spanning the U.S. and Canada. Hoover's competitors are licensees of other chemical suppliers to the wood treating industry who compete with Hoover's stocking distributors on a local basis. The primary areas of competition are product availability and price, although brand loyalty due to product quality is significant. Wood products are commodities with volatile market pricing; however, Hoover's reputation for quality products and its unique distribution model, which provides superior product availability, enable Hoover to maintain a leading position across the continent.

Dekko

Dekko has three distinct product families that compete in fragmented, competitive global markets: power and data distribution for office and furniture products, lighting solutions, and electrical harness manufacturing. These products are sold through dealer and distribution channels and original equipment manufacturer customers,

focused primarily on the North American market. While all markets and products are price sensitive, technology, engineering solutions, quality and delivery performance are critical in purchase decisions. Dekko's multiple long-term relationships, high-quality manufacturing facilities, engineering support and reputation as a solutions provider, in addition to being a product supplier, all contribute to sustaining its competitive advantages.

Graham Healthcare Group

The home health and hospice industries are extremely competitive and fragmented, consisting of both for-profit and nonprofit companies. According to the Medicare Payment Advisory Commission's July 2022 Data Book, there are approximately 11,474 Medicare-certified home health agencies and approximately 5,058 hospices in the U.S., with the number of active home healthcare providers rapidly increasing. GHG markets its services to physicians, discharge planners and social workers at hospitals, nursing homes, senior living communities and physicians' offices through a direct sales model. GHG differentiates its offerings based on response time, clinical programming, clinical outcomes and patient satisfaction. Throughout the seven states in which it operates, GHG competes primarily with both privately owned and hospital-operated home health and hospice service providers. The competitive landscape for other healthcare services provided by GHG is highly fragmented, with competition from a number of small providers and a few national companies.

Graham Automotive

The retail automotive industry is highly competitive and fragmented. Automobile dealerships compete with dealerships offering the same brands as well as those offering other manufacturers' brands. Competitors include small local dealerships and large national multi-franchise automotive dealership groups. In addition to competition for vehicle sales, dealerships compete for parts and service business with other dealerships, automotive parts retailers and independent mechanics. The principal competitive factors in vehicle sales are price, selection of vehicles, location of dealerships and quality of customer service. The principal competitive factors in parts and service sales are price, the use of factory-approved replacement parts, factory-trained technicians and the quality of customer service.

Leaf

Leaf operates in highly competitive and developing industries that are characterized by rapid technological change, a variety of business models and frequent disruption of incumbents by innovative entrants. Its art and design marketplaces, Society6 Group and Saatchi Art Group, compete with a wide variety of online and brick-and-mortar companies selling comparable products. Its made-to-order marketplace business, Society6 Group, primarily competes with companies that also utilize a made-to-order business model whereby consumer products featuring artist designs are produced by third-party fulfillment partners and shipped directly to customers, such as Redbubble, Zazzle, Art.com, Shutterfly and Minted, as well as companies that offer broader home décor and apparel products, such as Amazon, Etsy and Wayfair. Its online art gallery and in-person art fair business, Saatchi Art Group, competes with traditional offline art galleries, art consultants and online platforms selling original artwork, such as Artfinder, Artspace, Rise Art, Singulart, eBay and Amazon Art, as well as various art fairs that feature reasonably priced artwork from emerging artists, such as The Affordable Art Fair. Leaf's marketplaces must successfully attract, retain and engage both buyers and sellers to use its platforms and attend its fairs. The principal competitive factors for such marketplaces include the quality, price and uniqueness of the products, artwork or services being offered; the selection of goods and artists featured; the ability to source numerous products efficiently and cost-effectively with respect to its made-to-order products; customer service; the convenience and ease of the shopping experience; and its reputation and brand strength. Competition is expected to continue to intensify as online and offline businesses increasingly compete with each other and the barriers to enter online channels are reduced. For properties within its Media Group, Leaf faces intense competition from a wide range of competitors, including those of much larger scale. These markets are rapidly evolving, highly fragmented and competition could increase in the future as more companies enter the space. The Media Group competes for advertisers on the basis of a number of factors, including return on marketing

expenditures, price of its offerings, and the ability to deliver large audiences or precise types of segmented audiences. Principal competitors in this space currently include various online media companies ranging from large internet media companies to specialized and enthusiast properties that focus on particular areas of consumer interest, as well as social media outlets such as Facebook, TikTok, YouTube, Snapchat, Instagram and Pinterest, where brands and advertisers are focusing a significant portion of their online advertising spend in order to connect with their customers. Some of its competitors have larger audiences and more financial resources and many of its competitors are making significant investments in order to compete with various aspects of this business. Many of Leaf's current competitors have, and potential competitors may have, substantially greater financial, marketing and other resources than Leaf; greater technical capabilities; greater brand recognition; longer operating histories; differentiated products and services; and larger customer bases. These resources may help some of these competitors and potential competitors respond more quickly as the industry and technology evolves, focus more on product innovation, adopt more aggressive pricing policies and devote substantially more resources to website and system development.

Clyde's

The restaurant industry is highly competitive. Clyde's competes with national and regional chains and independent, locally owned restaurants for customers and personnel. The principal bases for competition are types of food and service, quality, price, location, brand and attractiveness of facilities.

Framebridge

Framebridge operates in a highly fragmented market. Competitors include small local retail operations and a few national retail chains. The competitive factors in the framing industry are price, selection and convenience. Framebridge's centralized manufacturing, clear and transparent pricing, retail stores that are optimized for foot traffic and a curated buying experience rather than framing workshops, and strong e-commerce and digital capabilities contribute to its competitive advantages.

Code3

The business of managed digital advertising is highly competitive. Public multinational advertising agencies may exacerbate price competition in an attempt to protect existing relationships with advertising clients in traditional media formats such as television. Public and private advertising technology companies, digital media agencies and newer market entrants such as consulting firms also compete on price, service and technology offerings. Code3 seeks to maintain a competitive advantage and maximize its clients' return on advertising budgets by utilizing a combination of the deep expertise of its employees, who manage media spending on the largest digital platforms and a full-service creative team with a nuanced understanding of digital media.

Decile

Decile faces competition from lower-cost providers that provide a narrower data analytics offering. In addition, at higher price points aimed at larger marketers ($50M+ annual revenue), there are several large customer data platform competitors that attempt to unify many disparate sources of data to improve omnichannel advertising outcomes. Decile seeks to maintain a competitive advantage by providing a better view of customer personas and their associated value and making it easier for clients to activate those customers in a more personalized way. Decile's third-party data enrichment capabilities and advanced analytics serve as key differentiators in the mid-market space where those capabilities are not available at a competitive price.

Slate

As a digital media company, Slate operates in highly competitive markets for subscribers, audiences and advertisers. For written work, Slate faces competition from other online publishers, especially magazines and

newspapers. In podcasting, Slate faces competition from other podcast networks, as well as traditional radio networks. In the face of stiff competition, Slate is able to attract and retain a large educated, affluent audience and subscriber base by creating high-quality content, and is then able to compete for advertisers who wish to reach that audience on trusted, brand-safe properties.

Pinna

Pinna is currently the only ad-free, audio on-demand streaming service designed just for children that offers multiple audio formats in one space that complies with the Children's Online Privacy Protection Act (COPPA). The market for children's subscription digital media entertainment is large. It includes media subscription services for families, subscription services for children, online learning/gaming destinations, audiobooks and podcasts for children, gaming subscriptions and free digital content. Key differentiators for Pinna include its access to multiple audio formats and its offering of curated best-in-class brands and original shows all in one ad-free COPPA-compliant place.

City Cast

City Cast is the only national network of daily local podcasts and newsletters. City Cast faces significant competition in all aspects of its business. Several companies operate large national networks of local daily newsletters, notably Axios and 6am City, both of which have many more subscribers than City Cast. There are also single-city daily newsletters–often created by the local newspaper–in every city where City Cast is located. On the podcasting side, public radio stations in most City Cast markets create local podcasts, as do some commercial radio stations. City Cast competes for advertising dollars with all these newsletter and podcast competitors, as well as with local radio, newspaper, TV and digital outlets.

EXECUTIVE OFFICERS

The executive officers of the Company, each of whom is elected annually by the Board of Directors, are as follows:

Donald E. Graham, age 77, has been Chairman of the Board of the Company since September 1993 and served as Chief Executive Officer of the Company from May 1991 until November 2015. Mr. Graham served as President of the Company from May 1991 until September 1993 and prior to that had been a Vice President of the Company for more than five years. Mr. Graham also served as Publisher of The Washington Post (the *Post)* from 1979 until September 2000 and as Chairman of the *Post* from September 2000 to February 2008.

Timothy J. O'Shaughnessy, age 41, became Chief Executive Officer of the Company in November 2015. From November 2014 until November 2015, he served as President of the Company. He was elected to the Board of Directors in November 2014. From 2007 to August 2014, Mr. O'Shaughnessy served as chief executive officer of LivingSocial, an e-commerce and marketing company that he co-founded in 2007. Mr. O'Shaughnessy is the son-in-law of Donald E. Graham, Chairman of the Company.

Andrew S. Rosen, age 62, became Executive Vice President of the Company in April 2014. He became Chairman of Kaplan, Inc. in November 2008 and served as Chief Executive Officer of Kaplan, Inc. from November 2008 to April 2014 and from August 2015 to the present. Mr. Rosen has spent more than 35 years at the Company and its affiliates. He joined the Company in 1986 as a staff attorney with the *Post* and later served as assistant counsel at *Newsweek*. He moved to Kaplan in 1992 and held numerous leadership positions there before being named Chairman and Chief Executive Officer of Kaplan, Inc.

Wallace R. Cooney, age 60, became Senior Vice President–Finance and Chief Financial Officer of the Company in April 2017. Mr. Cooney served as the Company's Vice President–Finance and Chief Accounting Officer from 2008 to 2017. He joined the Company in 2001 as Controller.

Jacob M. Maas, age 46, became Executive Vice President of the Company in January 2022, prior to which he served as Senior Vice President–Planning and Development beginning October 2015. Prior to joining the Company, he served as executive vice president of operations and head of corporate development at LivingSocial, an e-commerce and marketing company that he joined as chief financial officer in 2008.

Nicole M. Maddrey, age 58, became Senior Vice President, General Counsel and Secretary of the Company in April 2015. Ms. Maddrey joined the Company in 2007 as Associate General Counsel. Prior to joining the Company, Ms. Maddrey served as Special Counsel in the Division of Corporation Finance at the U.S. Securities and Exchange Commission.

Marcel A. Snyman, age 48, became Vice President and Chief Accounting Officer of the Company in January 2018. Mr. Snyman served as Controller of the Company from 2016 to 2018, prior to which he served as Assistant Controller beginning in April 2014 and Director of Accounting Policy beginning in July 2008.

Sandra M. Stonesifer, age 38, became Vice President–Chief Human Resources Officer of the Company in January 2021. Prior to joining the Company, Ms. Stonesifer was a consultant with S-Squared Consulting, an organization development consulting company.

HUMAN CAPITAL

The Company employs approximately 19,527 people worldwide, of which approximately 12,327 are employed in the U.S. and approximately 7,200 are employed outside the U.S. Employment across each of the Company's businesses is further discussed below.

In the education segment, Kaplan employs approximately 6,500 people on a full-time basis in 26 countries. Kaplan also employs substantial numbers of part-time employees who serve in instructional and administrative capacities. Kaplan's part-time workforce comprises approximately 3,500 individuals in 16 countries. Collectively, in the U.S. and Canada, 95 Kaplan employees are represented by a union. In countries where Kaplan has a presence but union membership is not disclosed to the employer–the U.K., Australia and Singapore–there may be union represented employees as well.

In the television broadcast segment, Graham Media Group has approximately 988 employees, including 948 full-time employees and 40 part-time employees, of whom approximately 104 are represented by a union.

In the manufacturing segment, Hoover has approximately 412 full-time employees, of whom 23 are represented by a union. Dekko has approximately 1,298 full-time employees and six part-time employees, none of whom is represented by a union. Joyce/Dayton Corp. has approximately 177 full-time employees, none of whom is represented by a union. Forney has approximately 110 full-time employees, of whom 41 are represented by a union.

In the healthcare segment, Graham Healthcare Group has approximately 1,715 full-time employees and 436 part-time employees. None of these employees is represented by a union.

In the automotive segment, Graham Automotive employs approximately 781 full-time employees. None of these employees is represented by a union.

In other businesses, Leaf Group employs 420 full-time employees, none of whom is represented by a union. Clyde's has approximately 159 full-time employees and 1,610 part-time employees, none of whom is represented by a union. Framebridge has approximately 591 employees, including 67 seasonal workers, none of whom is represented by a union. Code3 has approximately 186 full-time employees, none of whom is represented by a union. Decile has 36 full-time employees, none of whom is represented by a union. Slate employs 115 full-time employees and four part-time employees, of whom approximately 49 are represented by a union. Pinna employs

seven full-time employees, none of whom is represented by a union. The FP Group has 57 full-time employees and two part-time employees, of whom approximately 13 are represented by a union. City Cast has 58 full-time employees and two part-time employees.

The parent Company has approximately 74 full-time employees and one part-time employee, none of whom is represented by a union.

The Company recognizes the importance of attracting, developing and retaining highly qualified employees throughout each of its businesses. The following is a description of the Company's efforts to manage and promote human capital within its organization.

Oversight and Management. The Company's human resources organization and the human resource organizations of its various businesses manage employment-related matters, including recruiting and hiring, training, compensation, workplace safety, performance management, support for specific needs including supporting employees who are caregivers or working remotely, and creating diversity, equity and inclusion strategies. The Compensation Committee of the Board of Directors provides oversight of certain human capital matters, including compensation and benefits, executive development, workforce diversity and inclusion initiatives, and succession planning.

Compensation and Benefits. The Company offers strong compensation and benefits programs to its employees. Depending on the business unit, employee benefits may include healthcare and insurance benefits, health savings and flexible spending accounts, paid time off, family leave, employee assistance programs, tuition assistance programs, a matching gifts program, bonuses, long-term incentive compensation plans, pension participation and a 401(k) Plan. The Company also offers a small group of eligible employees certain equity-based grants under the Company's Incentive Compensation Plan with vesting and performance conditions to facilitate the attraction, retention, motivation and reward of key employees and to align their interests with those of the Company's stockholders.

Training and Talent Development. The Company is committed to the continued growth and development of its employees across all businesses. While development opportunities vary across the businesses, the Company seeks to offer a variety of learning opportunities, including virtual learning as well as on-the-job mentoring and coaching. U.S. employees complete core harassment and discrimination training and ethics training and all employees are offered specific skills training designed to support the growth and advancement of their professional skills. For example, Graham Media Group introduced a micro-learning platform that offers biweekly professional development activities to GMG employees. Clyde's Restaurant Group has a robust training program for both full-time and hourly staff, including a multi-day leadership program for all new salaried employees. In 2022, Hoover conducted an Employee HPT (High Potential Talent) assessment and built individual development plans with internal top talent. Kaplan offers personalized and immersive learning experiences for leaders via an e-learning platform designed to build capabilities and drive personal and business growth. Additionally, Kaplan provides a portfolio of individual, management and leadership development opportunities, including a leadership forum for directors to vice presidents, round table learning sessions for managers, new leaders training and individualized development planning.

Diversity and Inclusion. Diversity and inclusion remain a high priority within the Company. In 2022, several new initiatives focused on attracting, retaining, developing and engaging underrepresented talent were launched at both the corporate level and at the Company's business units. The Company requires all business units to set actionable goals and promote policies prioritizing diversity, equity and inclusion (DEI). The progress on those goals was presented to the Board in December of 2022. The GHC Diversity, Equity and Inclusion Council, a panel of DEI practitioners from across the business units, continued to meet in 2022 to build community and accountability and support ongoing progress. Additionally, the Company launched its first internal podcast focused on sharing insights and best practices about DEI with all employees.

The Company is committed to a culture in which its diverse employee base can thrive in an inclusive and respectful environment. As of December 2022, the diversity of the Company's employees in the U.S. was: 54% female; 46% male; 66% White; 13% Hispanic or Latino; 12% Black or African American; 6% Asian; and 3% Other.

The Company's businesses have launched various initiatives to support their diversity, equity and inclusion strategies in ways that are tailored to their employees, customers and products. For example, Graham Healthcare Group introduced new diversity-specific training courses aimed at cultural diversity and aging LGBTQIA+ patients. Graham Healthcare Group also implemented a new survey administration tool to assess potential gaps in career progression, employee experience, and engagement between employee populations. Graham Media Group continued to focus its efforts to ensure DEI is reflected in its editorial processes, story coverage, on-air presence and community outreach programs by offering ongoing learning opportunities, including newscast portrayals featuring people of color and diversity month webinars. Kaplan focuses on building and fostering an inclusive employee experience by offering employee and leader learning opportunities, including global Inclusive Colleague training and an expanded diverse holiday schedule to increase cultural awareness and build community. Additionally, Kaplan promoted BIPOC and women's financial, mental and physical health through a year-long wellness series.

Community Impact. The Company has a long history of investing in the communities it serves. While its businesses operate in a variety of industries in markets around the world, the Company is unified in its connection to the places where its teams live and work. In addition to philanthropy managed at the corporate level, the Company's business units engage in charitable endeavors, community and civic activities, and volunteer projects.

In 2022, the Corporate office provided approximately $1.4 million in financial support to over 80 nonprofit and civic organizations in the areas of education, health and human services, civic and community, and culture and art. Corporate philanthropy is primarily focused on providing resources, access and services to the most underserved members of the community. The Company has forged deep relationships with its community partners, and it works closely in collaboration with them to support their very important work.

The service-oriented nature of the Company's businesses, along with its core values, not only connects its daily operations to its products and services but also enables each entity to authentically engage in service through its normal business activities. For example, at the Education division, Kaplan is the primary donor and supporter of The Kaplan Educational Foundation (KEF), an independent public charity founded by Kaplan executives to help promote racial equality through higher education. The program works with the City University of New York (CUNY), to help high achieving, underrepresented community college students prepare for, gain acceptance to, pay for, and succeed at top four-year institutions such as Stanford University, Yale University, Brown University, Morehouse College, Smith College and numerous others. The foundation relies on Kaplan grants, in-kind service, donations from the Kaplan community, and volunteers from Kaplan's employee base. In addition, through a partnership with ACT, Inc., maker of the ACT® college admissions test, Kaplan provides free ACT prep for low-income students. In 2022, Kaplan enrolled approximately 186,000 students who qualified as such–according to eligibility in ACT's fee waiver program–delivering approximately $17 million in free ACT prep to low-income students. At GMG, its stations and their employees are committed to their local communities through spotlighting nonprofit and community organizations, hosting community forums to air and address community concerns, volunteering at local classrooms to conduct and air science experiments, and partnering with local organizations to assist people impacted by natural disasters. At WJXT, employees launched the Shoeboxes of Love initiative whereby they collected over 3,000 shoe boxes filled with personal care items, wrapped in a blanket for City Rescue Mission to be given to the unhoused in Jacksonville. At the Company's healthcare segment, Graham Healthcare Group partners with We Honor Veterans to serve the unique hospice needs of veterans and their families. There are numerous other examples of community impact and philanthropy throughout the Company, including conducting and/or participating in blood drives, actively engaging in initiatives to address food insecurity, and participating in annual toy, gift and basket drives to ensure that children

and families are well served during the holiday season. The Company supports and applauds the work of its employees and their commitment to serving others.

FORWARD-LOOKING STATEMENTS

All public statements made by the Company and its representatives that are not statements of historical fact, including certain statements in this Annual Report on Form 10-K and elsewhere in the Company's 2022 Annual Report to Stockholders, are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include comments about expectations related to acquisitions or dispositions or related business activities, including the TOSA, the Company's business strategies and objectives, anticipated results of license renewal applications, the prospects for growth in the Company's various business operations and the Company's future financial performance. Other forward-looking statements include comments about expectations related to the duration and severity of the COVID-19 pandemic and its effects on the Company's operations, financial results, liquidity and cash flows. As with any projection or forecast, forward-looking statements are subject to various risks and uncertainties, including the risks and uncertainties described in Item 1A of this Annual Report on Form 10-K, that could cause actual results or events to differ materially from those anticipated in such statements. Accordingly, undue reliance should not be placed on any forward-looking statement made by or on behalf of the Company. The Company assumes no obligation to update any forward-looking statement after the date on which such statement is made, even if new information subsequently becomes available.

AVAILABLE INFORMATION

The Company's internet address is www.ghco.com. The Company makes available free of charge through its website its Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, definitive proxy statements on Schedule 14A and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (Exchange Act) as soon as reasonably practicable after such documents are electronically filed with the Securities and Exchange Commission (SEC). In addition, the Company's Certificate of Incorporation, its Corporate Governance Guidelines, the Charters of the Audit and Compensation Committees of the Company's Board of Directors and the codes of conduct adopted by the Company and referred to in Item 10 of this Annual Report on Form 10-K are all available on the Company's website; printed copies of such documents may be obtained by any stockholder upon written request to the Secretary, Graham Holdings Company at 1300 North 17th Street, Arlington, VA 22209. The contents of the Company's website are not incorporated by reference into this Form 10-K and shall not be deemed "filed" under the Exchange Act.

The SEC website, www.sec.gov, contains the reports, proxy statements and information statements and other information regarding issuers that file electronically with the SEC.

Item 1A. Risk Factors.

SUMMARY RISK FACTORS

This risk factor summary does not contain all of the information that may be important to you, and you should read this risk factor summary together with the more detailed discussion of risks and uncertainties set forth following this section under the heading "Risk Factors," as well as elsewhere in this Annual Report on Form 10-K. Additional risks, beyond those summarized below or discussed elsewhere in this Annual Report on Form 10-K, may apply to the Company's business, activities or operations as currently conducted or as may be conducted in the future. These risks include, but are not limited to, the following:

Risks Related to the Company's Education Business

- Changes in International Regulations, Travel Restrictions and Sanctions.
- Difficulties of Managing Foreign Operations and Failure to Comply with Foreign Regulatory Requirements.
- Changes in U.K. Tax Laws.

- Failure to Comply with Statutory and Regulatory Requirements as a Third-Party Servicer to Title IV Participating Institutions.
- Failure to Comply with the ED’s Title IV Incentive Compensation Rule.
- Failure to Comply with the ED’s Title IV Misrepresentation Regulations.
- Compliance Reviews, Program Reviews, Audits and Investigations, Including in Connection with Borrower Defense to Repayment Claims.
- Noncompliance with Regulations by KNA’s Client Institutions.
- Failure to Realize the Anticipated Benefits of the Purdue Global Transaction.
- Regulatory Changes and Developments.
- Changes in the Extent to Which Standardized Tests are Used and Increased Competition.
- Postponement and Cancellation of Examinations and Changes in the Extent to Which Licensing and Proficiency Examinations Are Used.

Risks Related to the Company’s Television Broadcasting and Media Businesses

- Changing Perceptions about the Effectiveness of Television Broadcasting in Delivering Advertising.
- Increased Competition Resulting from Technological Innovations and Changing Consumer Behavior.
- Changes in the Nature and Extent of Government Regulations.
- Transition to New Technical Standards for Broadcast Television Stations.
- Changes in MVPD Subscriber Numbers, Retransmission Consent Fees, and “Reverse Retransmission Consent” Payments to the Networks.
- Potential Liability for Intellectual Property Infringement.

Risks Related to the Company’s Manufacturing Businesses

- Failure to Recruit and Retain Production Staff Needed to Meet Customer Demand.
- Potential Liability Claims.

Risks Related to the Company’s Healthcare Business

- Extensive Regulation of the Healthcare Industry.
- Continued Nursing Staffing Shortages.
- Negative Impact on Medicare Reimbursement from Value-based Purchasing Requirements.

Risks Related to the Company’s Automotive Businesses

- Termination or Non-renewal of a Dealership Agreements and Limitations on the Company’s Ability to Acquire Additional Dealerships.
- Changes Affecting Automobile Manufacturers.
- Changes to State Dealer Franchise Laws and Technological Innovations.
- Changes in a Manufacturer’s Incentive Programs.
- Changes in Economic Conditions and Vehicle Inventories.

Risks Related to the Company's Other Businesses

- Current Macroeconomic Conditions.
- Failure to Successfully Drive Traffic to Leaf's Marketplaces and Media Properties and Expand its Customer Base for its Marketplaces.
- Failure to Effectively Distribute Leaf's Media Content on Social Media Platforms or Effectively Optimize its Mobile Solutions.
- Significant Competition for Leaf's Businesses.
- Failure to Recruit and Retain Employees in the Company's Restaurants.
- Food-Borne Illness Concerns and Damage to the Company's Reputation.
- Concentration of the Company's Restaurants in the Washington, D.C. Region.

Risks Related to the Company's Stock Ownership and Operations

- As a Controlled Company, the Rights of Class B Common Stockholders are Limited.
- Pandemics or Other Outbreaks of Disease.
- Failure to Comply with Environmental and Health and Safety Laws.
- Failure to Successfully Integrate Acquired Businesses.
- Goodwill and Other Intangible Assets Impairment.

Risks Related to Cybersecurity, Information Technology and Data Management

- System Disruptions and Security Threats to the Company's Information Technology Infrastructure.
- Failure to Comply with Privacy Laws or Regulations.

RISK FACTORS

The Company faces a number of risks and uncertainties in connection with its operations. Described below are the most material risks faced by the Company. These risks and uncertainties may not be the only ones faced by the Company. Additional risks and uncertainties not presently known, or currently deemed immaterial, may adversely affect the Company in the future. In addition to the other information included in this Annual Report on Form 10-K, investors should carefully consider the following risk factors. If any of the events or developments described below occurs, it could have a material adverse effect on the Company's business, financial condition or results of operations.

Risks Related to the Company's Education Business

- **Changes in International Regulations and Travel Restrictions Have Materially Adversely Affected and Together with Changes in Sanctions Could Continue to Materially Adversely Affect International Student Enrollments and Kaplan's Business.**

Kaplan is subject to a wide range of laws and regulations relating to its international operations. These include domestic laws with extraterritorial reach, such as the U.S. Foreign Corrupt Practices Act, international laws, such

as the U.K. Bribery Act, as well as the local regulatory regimes of the countries in which Kaplan operates. These laws and regulations change frequently. Failure to comply with these laws and regulations could result in significant penalties or the revocation of Kaplan's authority to operate in the applicable jurisdiction, each of which could have a material adverse effect on Kaplan's operating results.

In response to the COVID-19 pandemic, many governments imposed student travel restrictions (applicable to exit and entry), made recommendations for their students to return home and closed physical campus locations, and many state and professional bodies postponed or canceled examination dates related to state examinations and professional education programs, all of which have materially adversely affected Kaplan International's operations and resulted in significant losses at Kaplan Languages Group. Certain of these restrictions remained in place in 2022 and some may remain in place into 2023. The emergence of new variants of COVID-19, and consequential changes to travel and study arrangements could further negatively affect Kaplan International and its operating results. Further changes to the regulatory environment, including changes to government policy or practice in oversight and enforcement, or other factors, including geopolitical instability, imposition or extension of international sanctions, a natural disaster or pandemic in either the students' countries of origin or countries in which they desire to study, could continue to negatively affect Kaplan's ability to attract and retain students and negatively affect Kaplan's operating results. Additionally, increasingly, governments have begun imposing sales taxes on digital services, such as education, offered in their jurisdictions by foreign providers. Any significant changes to availability of government funding for education, visa policies for students and their dependents, or other administrative immigration requirements, or the tax environment, including changes to tax laws, policies and practices, in any one or more countries in which KI operates or makes its services available could negatively affect its operating results.

KI's operations, institutions and programs in the U.S. may be subject to state-level regulation and oversight by state regulatory agencies, whose approval or exemption from approval is necessary to allow an institution to operate in the state. These agencies may establish standards for instruction, qualifications of faculty, location and nature of facilities, financial policies and responsibility and other operational matters. Institutions that seek to admit international students are required to be federally certified and legally authorized to operate in the state in which the institution is physically located in order to be allowed to issue the relevant documentation to permit international students to obtain a visa.

A substantial portion of KI's revenue comes from programs that prepare international students to study and travel in English-speaking countries. In 2022, university preparation programs were principally delivered in Australia, Singapore and the U.K. KI's ability to enroll students in these programs is directly dependent on its ability to comply with complex regulatory environments. For example, the impact of Brexit on KI over time will depend on the agreed terms of the U.K.'s withdrawal from the EU. Uncertainty over the impact and terms of Brexit trade deals may materially diminish interest in traveling to the U.K. for study. If the U.K. is no longer viewed as a favorable study destination, KI's ability to recruit international students would be adversely impacted, which would materially adversely affect KI's results of operations and cash flows.

Changes to levels of direct and indirect government funding for international education programs would also materially affect the success of KI's operations. For example, if access to student loans or other funding were to be lost for KI operations that admit students who are entitled to receive the benefit of this funding, Kaplan's operating results could be materially adversely affected.

In January 2021, President Biden reversed a previously enacted ban on travel from certain countries to the U.S. and directed the State Department to restart visa processing for individuals from the affected countries. There have since been new, unrelated travel restrictions into the U.S. due to COVID-19, and those restrictions can be expected to continue changing. On September 25, 2020, the previous U.S. presidential administration proposed significant changes to the visa rules governing entry of non-immigrant academic students and exchange visitors. In July 2021, the Biden administration formally withdrew the notice of proposed rulemaking regarding these changes. Nevertheless, negative perceptions regarding travel to the U.S. could continue to have a significant

negative impact on KI's ability to recruit international students, and Kaplan's business could be materially adversely affected.

- **Difficulties of Managing Foreign Operations and Failure to Comply with Foreign Regulatory Requirements Have Negatively Impacted and Could Continue to Negatively Affect Kaplan's Business.**

Kaplan has operations and investments in a growing number of foreign countries and regions, including Australia, Canada, the People's Republic of China, Colombia, France, Germany, Hong Kong, India, Ireland, Japan, New Zealand, Nigeria, Saudi Arabia, Singapore, the U.K. and the United Arab Emirates. Operating in foreign countries and regions presents a number of inherent risks, including the difficulties of complying with unfamiliar laws and regulations, effectively managing and staffing foreign operations, successfully navigating local customs and practices, preparing for potential political and economic instability and adapting to currency exchange rate fluctuations. Failure to effectively manage these risks could have a material adverse effect on Kaplan's operating results.

In June 2021, the Committee for Private Education (CPE) in Singapore instructed Kaplan Singapore to cease new enrollments for certain diploma programs, comprising three marketing diploma programs on both a full and part-time basis due to noncompliance with minimum entry level requirements for admission and to teach out existing students in these programs. On August 23, 2021, the CPE issued the same instructions with respect to the Kaplan Foundation diploma programs and four information technology diploma programs on both a full and part-time basis. In November 2021, the CPE issued the same instructions with respect to a further 23 full-time or part-time diploma programs. Kaplan Singapore successfully applied for re-registration of certain diploma and additional full-time and part-time programs in 2022. In May 2022, CPE also renewed Kaplan Singapore's registrations as a private education institution for a four-year period expiring 2026. In 2023, Kaplan Singapore will apply to renew the certification required for private education institutions to enroll international students and offer certain programs. As enrollments in diploma programs and undergraduate degree programs are not yet at levels existing prior to the regulatory actions in 2021, the impact from regulatory actions by the CPE will continue to have an adverse impact on Kaplan Singapore's revenues, operating results and cash flows in the future while enrollment levels stabilize.

- **Changes in U.K. Tax Laws Could Have a Material Adverse Effect on Kaplan International.**

The UK Pathways Colleges located in England were required to register with the Office for Students (OfS) to ensure they could continue operating as English higher education providers. The UK Pathways Colleges (excluding Glasgow and York) were entered on the OfS register of approved providers with Approved Fee Cap Status in August 2020. These colleges now operate under the regulatory oversight of the OfS. Colleges registered with the OfS under Approved Fee Cap status do not charge students Value Added Tax (VAT) on tuition fees based on a statutory exemption available to Approved Fee Cap providers. The York College forms part of the University of York's Approved Fee Cap registration. If KI Pathways were to lose its Approved Fee Cap status with the OfS, KI Pathways Colleges' financial results may be materially adversely impacted.

The Glasgow College is not currently included in the OfS registration as it is located in Scotland. Under a different statutory VAT exemption, bodies which qualify for VAT purposes as "colleges of a university" are able to exempt their tuition fees from VAT, and UK Pathways Glasgow International College applies this status. In 2019, a tax case was determined by the U.K. Supreme Court on the meaning of "college of a university." The U.K. Supreme Court decided the case in the college's favor. The result was more favorable to private providers working in collaboration with a university. The U.K. Supreme Court emphasized five principal tests for a private provider to meet, for it to be sufficiently integrated with a university, to qualify as a "college of a university" even if it does not have a constitutional link to the university. Although the focus on these five tests has now been incorporated into official His Majesty's Revenue and Customs (HMRC) guidance, it is not yet clear how HMRC will apply the Supreme Court judgment and the five key tests in practice. If the HMRC's application of the Supreme Court judgment and the five key tests deems Glasgow International College not to constitute a "college of a university" and not entitled to a VAT exemption, KI Pathways Colleges' financial results may be materially adversely impacted if they are not able to meet any new requirements.

Following the departure of the U.K. from the EU on December 31, 2020, the U.K. may further develop its VAT rules in this complex area separate from the EU rules but has not yet done so. Kaplan continues to closely monitor this area.

- **Failure to Comply with Statutory and Regulatory Requirements as a Third-Party Servicer to Title IV Participating Institutions Could Result in Monetary Liabilities or Subject Kaplan to Other Material Adverse Consequences.**

KNA provides services to Purdue Global (including financial aid services to Purdue Global), Purdue University and other Title IV participating institutions, and as such, KNA is a “third-party servicer” for Purdue Global as defined in the Title IV regulations. As a result, KNA is subject to applicable statutory provisions of Title IV and ED regulations that, among other things, require Kaplan to be jointly and severally liable with its Title IV participating client institution(s) to the ED for any violation by such client institution(s) of any Title IV statute or ED regulation or requirement. Separately, if KNA provides financial aid services to more than one Title IV participating institution, it will be required to arrange for an independent auditor to conduct an annual Title IV audit of KNA’s compliance with applicable ED requirements. KNA is also subject to other federal and state laws, including federal and state consumer protection laws and rules prohibiting unfair or deceptive marketing practices; data privacy, data protection and information security requirements established by federal, state and foreign governments, including, for example, the Federal Trade Commission; and applicable provisions of the Family Educational Rights and Privacy Act regarding the privacy of student records.

Failure to comply with these and other federal and state laws and regulations could result in adverse consequences, including, for example:

- The imposition on Kaplan of fines, other sanctions or liabilities, including repayment obligations for Title IV funds to the ED or the termination or limitation of Kaplan’s eligibility to provide services as a third-party servicer to any Title IV participating institution if KNA fails to comply with statutory or regulatory requirements applicable to such service providers;
- Adverse effects on Kaplan’s business and operations from a reduction or loss in KNA’s revenues under the TOSA or any other agreement with any Title IV participating institution if a client institution loses or has limits placed on its Title IV eligibility, accreditation, operations or state licensure or is subject to fines, repayment obligations or other adverse actions owing to noncompliance by KNA (or the institution) with Title IV, accreditor, federal or state agency requirements;
- Liability under the TOSA or any other agreement with any Title IV participating institution for noncompliance with federal, state or accreditation requirements arising from KNA’s conduct; and
- Liability for noncompliance with Title IV or other federal or state requirements occurring prior to the transfer of KU to Purdue.

Although KNA endeavors to comply with all U.S. federal and state laws and regulations, KNA cannot guarantee that its implementation of the relevant rules will be upheld by the ED or other agencies or upon judicial review. The laws, regulations and other requirements applicable to KNA and its client institutions are subject to change and to interpretation. In addition, there are other factors related to KNA’s client institutions’ compliance with federal, state and accrediting agency requirements, some of which are outside of KNA’s control, that could have a material adverse effect on KNA’s client institutions’ revenues and, in turn, on KNA’s operating results.

- **Failure to Comply with the ED’s Title IV Incentive Compensation Rule Could Subject Kaplan to Liabilities, Sanctions and Fines.**

Under the ED’s incentive compensation rule, an institution participating in Title IV programs may not provide any commission, bonus or other incentive payment to any person or entity engaged in any student recruiting or admission activities or in making decisions regarding the awarding of Title IV funds if such payment is based directly or indirectly on success in securing enrollments or financial aid. KNA is a third party providing bundled services to Title IV participating institutions, including recruiting and, in the case of Purdue Global, financial aid

services. As such, KNA is also subject to the incentive compensation rule and cannot provide any commission, bonus or other incentive payment to any covered employees, subcontractors or other parties engaged in certain student recruiting, admission or financial aid activities based on success in securing enrollments or financial aid. In addition, Purdue Global's payments to KNA under the TOSA (as well as any other agreement with any Title IV participating institution) must comply with revenue sharing guidance provided by the ED related to bundled services agreements. In 2011 guidance, the ED provided that in certain arrangements with Title IV participating institutions where student recruiting services are "bundled" with other non-recruiting services, revenue sharing may be allowable despite the incentive compensation rule's general prohibition on such revenue sharing with entities or individuals that provide recruiting services. Because this guidance is not codified in any rule or law, but is instead an ED opinion on the applicability of the incentive compensation rule, such guidance can be revoked at any time and without notice. Some lawmakers and states, such as California, have publicly called for the revocation of this guidance or sought to introduce federal and state legislation seeking to prevent any such revenue sharing. The change of control of the executive branch in 2021 increased the likelihood of changes to this guidance and to the incentive compensation rule or limitations on the bundled service allowance through additional federal rulemaking. As previously described, the TOSA revenue sharing fee provisions are defined as deferred purchase price payments rather than payments for services. KNA's services are paid for as a percentage of KNA's costs of delivering those services to Purdue Global. KNA cannot predict how the ED or a federal court will interpret, revise or enforce all aspects of the incentive compensation rule or the bundled service revenue sharing guidance in the future or how they would be applied to the TOSA or any of KNA's agreements by the ED or in any litigation. Any revisions or changes in interpretation or enforcement could require KNA and its client institutions to change their practices or renegotiate the tuition revenue sharing payment terms of KNA's agreements with such client institutions and could have a material adverse effect on Kaplan's business and results of operations. Additionally, failure to comply with the incentive compensation rule could result in litigation or enforcement actions against KNA or its clients and could result in liabilities, fines or other sanctions against KNA or its clients, which could have a material adverse effect on Kaplan's business and results of operations.

- **Failure to Comply with the ED's Title IV Misrepresentation Regulations Could Subject Kaplan to Liabilities, Sanctions and Fines.**

A Title IV participating institution is required to comply with the ED regulations related to misrepresentations and with related federal and state laws. These laws and regulations are broad in scope and may extend to statements by servicers, such as KNA, that provide marketing or certain other services to such institutions. These laws and regulations may also apply to KNA's employees and agents, with respect to statements addressing the nature of an institution's programs, financial charges or the employability of its graduates. KNA provides certain marketing and other services to Title IV participating institutions. On October 31, 2022, the ED published a new final rule governing the "Borrower Defense to Repayment" rules that will be effective July 1, 2023. Among other things, the final rule refines the standard for aggressive and deceptive recruitment tactics that might constitute misrepresentation and provides additional bases for future borrowers' defense claims against their current or former institutions. The failure to comply with these or other federal and state laws and regulations regarding misrepresentation and marketing practices could result in the imposition on KNA or its client institutions of fines, other sanctions or liabilities, including federal student aid repayment obligations to the ED, the termination or limitation of Kaplan's eligibility to provide services as a third-party servicer to Title IV participating institutions, the termination or limitation of a client institution's eligibility to participate in the Title IV programs, or legal action by students or other third parties. A violation of misrepresentation regulations or other federal or state laws and regulations applicable to the services KNA provides to its client institutions arising out of statements by KNA, its employees or agents could require KNA to pay the costs associated with indemnifying its client institutions from applicable losses resulting from the violation or could result in termination by such client institutions of their services agreements with KNA.

- **Compliance Reviews, Program Reviews, Audits and Investigations, Including in Connection with Borrower Defense to Repayment Claims, Could Result in Findings of Noncompliance with Statutory and Regulatory Requirements and Result in Liabilities, Sanctions and Fines.**

KNA and its client institutions are subject to reviews, audits, investigations and other compliance reviews conducted by various regulatory agencies and auditors, including, among others, the ED, the ED's Office of the Inspector General, accrediting bodies and state and various other federal agencies. These compliance reviews can result in findings of noncompliance with statutory and regulatory requirements that can, in turn, result in the imposition of fines, liabilities, civil or criminal penalties or other sanctions against KNA and its client institutions, which could have an adverse effect on Kaplan's financial results and operations. Separately, if KNA provides financial aid services to more than one Title IV participating institution, it will be required to arrange for an independent auditor to conduct an annual Title IV compliance audit of KNA's compliance with applicable ED requirements. KNA's client institutions are also required to arrange for an independent auditor to conduct an annual Title IV audit of their compliance with applicable ED requirements, including requirements related to services provided by KNA.

On September 3, 2015, Kaplan sold substantially all of the assets of the former Kaplan Higher Education Campuses (KHE Campuses). As part of the transaction, similar to the transfer of KU, Kaplan retained liability for the pre-sale conduct of the KHE schools. Although Kaplan no longer owns KU or the former KHE Campuses, Kaplan may be liable to the current owners of KU and the former KHE Campuses, for the pre-sale conduct of the schools, and the pre-sale conduct of the schools has been and could be the subject of future compliance reviews, regulatory proceedings or lawsuits that could result in monetary liabilities or fines or other sanctions.

On May 6, 2021, Kaplan received a notice from the ED that it would be conducting a fact-finding process pursuant to the borrower defense to repayment regulations to determine the validity of more than 800 borrower defense to repayment claims and a request for documents related to several of Kaplan's previously owned schools. Beginning in July 2021, Kaplan started receiving the claims and related information requests. In total, Kaplan received 1,449 borrower defense applications that seek discharge of approximately $35 million in loans, excluding interest. Most claims received are from former KU students. The ED's process for adjudicating these claims is subject to the borrower defense regulations but it is not clear to what extent the ED will exclude claims based on the underlying statutes of limitations, evidence provided by Kaplan, or any prior investigation related to schools attended by the student applicants. Kaplan believes it has defenses that would bar any student discharge or school liability including that the claims are barred by the applicable statute of limitations, unproven, incomplete and fail to meet regulatory filing requirements. On August 16, 2022, the ED announced the approval of discharges for just under 100 borrowers who had enrolled in the medical assistant or medical billing and coding program at Kaplan Career Institute's Kenmore Square location in Massachusetts from July 1, 2011 to February 16, 2012, when the institution stopped enrolling new students. These are borrowers identified by the Massachusetts Attorney General as part of an investigation in 2013-2015. The location closed in February 2013. The ED has not to date sought to recoup any discharged amount from Kaplan. Although the ED did not announce the total amount discharged, Kaplan believes it to be approximately $200,000. Kaplan believes that each of the students subject to discharge were likely previously covered by Kaplan's prior settlement with the Massachusetts Attorney General through which they should have received refunds of all or part of their tuition.

The settlement agreement in *Sweet v. Cardona*, a case brought by plaintiffs against the ED and described below, discharges all pending BDTR claims against Kaplan filed through the date of the settlement agreement in June 2022. Although the ED may argue that it has the right to separately adjudicate those BDTR claims to attempt to seek recoupment from Kaplan, it is not clear whether a federal court would hold that the Sweet settlement resolves or moots all such claims.

In any case, Kaplan expects to vigorously defend any attempt by the ED to hold Kaplan liable for any ultimate student discharges and is responding to all claims with documentary and narrative evidence to refute the allegations, demonstrate their lack of merit and support the denial of all such claims by the ED. As noted, if the claims are successful, the ED may seek reimbursement for the amount discharged from Kaplan. If the ED

initiates a reimbursement action against Kaplan following approval of additional former students' borrower defense to repayment applications, Kaplan may be subject to significant liability.

- **Noncompliance with Regulations by KNA's Client Institutions May Adversely Impact Kaplan's Results of Operations.**

KNA currently provides services to higher education institutions that are heavily regulated by federal and state laws and regulations and by accrediting bodies. Currently, a substantial portion of KNA's revenue is attributable to service fees and deferred purchase price payments it receives under its agreement with Purdue Global, which are dependent upon revenue generated by Purdue Global and upon Purdue Global's eligibility to participate in the Title IV federal student aid program. To maintain Title IV eligibility, Purdue Global and KNA's other client institutions must be certified by the ED as eligible institutions, maintain authorizations by applicable state education agencies and be accredited by an accrediting commission recognized by the ED. Purdue Global and KNA's other client institutions must also comply with the extensive statutory and regulatory requirements of the Higher Education Act and other state and federal laws and accrediting standards relating to their financial aid management, educational programs, financial strength, disbursement and return of Title IV funds, facilities, recruiting practices, representations made by the school and other parties, and various other matters. Additionally, Purdue Global and other client institutions are subject to laws and regulations that, among other things, limit student default rates on the repayment of Title IV loans; permit borrower defenses to repayment of Title IV loans based on certain conduct of the institution; establish specific measures of financial responsibility and administrative capability; regulate the addition of new campuses and programs and other institutional changes; require compliance with state professional licensure board requirements to the extent applicable to institutional programs; require compliance with the Title IV definition of nonprofit institution; and require state authorization and institutional and programmatic accreditation. In addition, the Coronavirus Aid, Relief, and Economic Security (CARES) Act, the Consolidated Appropriations Act of 2021 and subsequent guidance from the ED have created changes in the administration of federal financial assistance programs, the interpretation of which may not yet be fully understood.

If the ED finds that Purdue Global or any other KNA client institution has failed to comply with Title IV requirements or improperly disbursed or retained Title IV program funds, it may take one or more of a number of actions, including: fining the school, requiring the school to repay Title IV program funds, limiting or terminating the school's eligibility to participate in Title IV programs, initiating an emergency action to suspend the school's participation in the Title IV programs without prior notice or opportunity for a hearing, transferring the school to a method of Title IV payment that would adversely affect the timing of the institution's receipt of Title IV funds, requiring the school to submit a letter of credit, denying or refusing to consider the school's application for renewal of its certification to participate in the Title IV programs or for approval to add a new campus or educational program, requiring the institution to comply with additional regulatory requirements reserved for schools not meeting the definition of a nonprofit institution including 90/10 and Gainful Employment requirements, and/or referring the matter for possible civil or criminal investigation. There can be no assurance that the ED will not take any of these or other actions in the future, whether as a result of lawsuits, program reviews or otherwise. In addition, on August 18, 2022 the ED granted new provisional certification until June 30, 2024. Under this most recent PPPA, Purdue Global must apply for and receive approval for expansion or any substantial change before it may award, disburse or distribute Title IV funds based on the substantial change. Substantial changes generally include, but are not limited to: (a) establishment of an additional location; (b) increase in the level of academic offering beyond those listed in the institution's Eligibility and Certification Approval Report; (c) addition of any educational program (including degree, non-degree or short-term training programs), or (d) the addition of any new degree program. In addition, the institution must pay any liabilities found in a currently open program review prior to the expiration of the PPPA. Purdue Global must also quarterly inform the ED of any governmental investigations involving the university as well as provide a summary of any student complaints. The provisional certification ends upon the ED's notification to the institution of the ED's decision to grant or deny a six-year certification to participate in the Title IV, HEA programs. If Purdue Global or another KNA client institution loses or has limits placed on its Title IV eligibility, accreditation or state

licensure, or if Purdue Global or another KNA client institution is subject to fines, repayment obligations or other adverse actions owing to its or Kaplan's noncompliance with Title IV regulations, accreditor or state agency requirements, or other state or federal laws, Kaplan's financial results of operations could be adversely affected. Additionally, as a prior owner of Title IV institutions, KNA may retain certain liability for student loans related to the current BDTR applications described above or future similar applications.

In turn, any of the aforementioned consequences could have a material adverse effect on Kaplan's operating results even though such institution's compliance is affected by circumstances beyond Kaplan's control, including, for example:

- a reduction or loss in KNA's revenues under the TOSA or other client agreements if Purdue Global or any other KNA client institution loses or has limits placed on its Title IV eligibility, accreditation or state licensure;
- a reduction or loss in KNA's revenues under the TOSA or other client agreements if Purdue Global or any other client institution is subject to fines, repayment obligations or other adverse actions owing to noncompliance by Purdue Global (or Kaplan) with Title IV, accreditor or state agency requirements;
- the imposition on KNA of fines or repayment obligations to the ED or the termination or limitation on Kaplan's eligibility to provide services to Purdue Global or other Title IV participating institutions if findings of noncompliance by Purdue Global or such other institution result in a determination that Kaplan failed to comply with statutory or regulatory requirements applicable to service providers; and
- liability under the TOSA or other client agreements for noncompliance with federal, state or accreditation requirements arising from KNA's conduct.

- **Kaplan May Fail to Realize the Anticipated Benefits of the Purdue Global Transaction.**

Kaplan's ability to realize the anticipated benefits of the Purdue Global transaction will depend, in part, on its ability to successfully and efficiently provide services to Purdue Global. Achieving the anticipated benefits is subject to a number of uncertainties, including whether the services can be provided in the manner and at the cost Kaplan anticipated and whether Purdue Global is able to realize anticipated student enrollment levels. If Kaplan is unable to effectively execute its post-transaction strategy, it may take longer than anticipated to achieve the benefits of the transaction or it may not realize those benefits at all. In 2022 Purdue Global began working with KNA to provide certain human resources, finance and accounting, facility management, and communications services itself, in-house. The TOSA (Kaplan's service agreement with Purdue Global) acknowledges that the Purdue Global Board of Trustees controls the university. While the TOSA provides financial protections to Kaplan to ensure payment of certain of its fees, actions by Purdue Global that change university policies, direct the provision of certain non-academic service functions, or increase costs associated with the non-academic service functions could impact Kaplan's ability to achieve the benefits of the transaction.

- **Regulatory Changes and Developments Could Negatively Impact Kaplan's Results of Operations.**

Any legislative, regulatory or other development that has the effect of materially reducing the amount of Title IV financial assistance or other federal, state or private financial assistance available to the students of Purdue Global or any other client institution could have a material adverse effect on Kaplan's business and results of operations. In addition, any development that has the effect of making the terms on which Title IV financial assistance or other financial assistance funds are available to Purdue Global's or other client institutions' students materially less attractive could have a material adverse effect on Kaplan's business and results of operations.

The laws, regulations and other requirements applicable to KNA or any KNA client institutions are subject to change and to interpretation. Regulations drafted as a result of the 2021 Negotiated Rulemaking and released in 2022 and effective in July 2023 include restrictions on revenue sharing arrangements between universities and former university owners, as discussed above. This could impact KNA Higher Education managed service provider contracts with Purdue Global. In addition, any change in general to the currently allowed revenue sharing requirements or limitations could impact other KNA client institutions such as Wake Forest, Purdue or

Lynn (or others). These and other regulatory, policy or legal changes could include imposing outcome metrics on universities, a form of free community college, and changes to the financial aid system, including broad loan forgiveness. In addition, the 2021 Negotiated Rulemaking also resulted in new rules that cover, in part, rules related to the borrower defense to repayment adjudication process and recovery from institutions, closed school loan discharges, disability loan discharges, public loan forgiveness, income driven repayment plans and arbitration agreements. The ED also changed the Title IV definition of "nonprofit" institution to generally exclude from that definition any institution that is an obligor on a debt owed to a former owner of the institution or maintains a revenue-based service agreement with a former owner of the institution. Such regulatory changes as well as those described above could subject Purdue Global to additional regulatory requirements. The new rules and changes to existing rules will not be effective until July 1, 2023. In addition, there are other factors related to Purdue Global's and other client institutions' compliance with federal, state and accrediting agency requirements—many of which are largely outside of Kaplan's control—that could have a material adverse effect on Purdue Global's and other client institutions' revenues and, in turn, on Kaplan's operating results, including, for example:

Reduction in Title IV or other federal, state or private financial assistance: KNA receives revenue based on its agreements with client institutions and particularly revenue from Purdue Global under the TOSA. Purdue Global is expected to derive a significant percentage of its tuition revenues from its participation in Title IV programs. Any legislative, regulatory or other development that materially reduces the amount of Title IV, federal, state or private financial assistance available to the students of Purdue Global and other client institutions could have a material adverse effect on Kaplan's business and results of operations. In addition, any development that makes the terms of such financial assistance less attractive could have a material adverse effect on Kaplan's business and results of operations.

Compliance reviews and litigation: Institutions participating in the Title IV programs, including Purdue Global and other client institutions, are subject to program reviews, audits, investigations and other compliance reviews conducted by various regulatory agencies and auditors, including, among others, the ED, the ED's Office of the Inspector General, accrediting bodies and state and various other federal agencies, as well as annual audits by an independent certified public accountant of compliance with Title IV statutory and regulatory requirements. Purdue Global and other client institutions also may be subject to various lawsuits and claims related to a variety of matters, including but not limited to alleged violations of federal and state laws and accrediting agency requirements. These compliance reviews and litigation matters could extend to activities conducted by KNA on behalf of Purdue Global or other client institutions and to KNA itself as a third-party servicer subject to Title IV regulations.

Legislative and regulatory change: Congress periodically revises the Higher Education Act and other laws and enacts new laws governing the Title IV programs and annually determines the funding level for each Title IV program and may make changes in the laws at any time. The ED and other federal and state agencies also may issue new regulations and guidance or change their interpretation of regulations at any time. For example, on October 27, 2022 and October 31, 2022 the ED released new final regulations that further change the borrower defense regulations, including changes affecting the ability of student borrowers to obtain discharges of their obligations to repay certain Title IV loans that were first disbursed on or after July 1, 2023; relating to recoupment of BDTR discharges from institutions; adding a new definition for nonprofit institutions that limits the ability of such institutions to contract with former owners; and, establishing new accountability rules for colleges and universities undergoing changes in ownership. The application of these regulations to KNA for loans disbursed between July 1, 2017, and March 22, 2018, the close of the Purdue Global transaction, could materially affect Kaplan's revenues. Additionally, changes to the ability of students to discharge loans owing to prior school closures could impose liability on Kaplan for loans made to students at institutions previously owned by Kaplan and closed during Kaplan's ownership. Any action by Congress or the ED that significantly reduces funding for Title IV programs or the ability of Purdue Global or other client institutions to receive funding through these programs could reduce Purdue Global's or other client institutions' enrollments and tuition revenues and, in turn, the revenues KNA receives under the TOSA or other agreements. Any action by Congress or

the ED that impacts the ability of Purdue Global to contract with KNA to receive a share of revenue as deferred payment for the sale of KU or the ability of KNA to contract with any client institution to provide bundled services in exchange for a share of tuition revenue could require KNA to modify the TOSA, other agreements or its practices and could impact the revenues KNA may receive under such agreements. Congress, the ED and other federal and state regulators may create new laws or take actions that may require Purdue Global, other client institutions or KNA to modify practices in ways that could have a material adverse effect on Kaplan's business and results of operations.

Increased regulatory scrutiny of postsecondary education and service providers: The increased scrutiny of online schools that offer programs similar to those offered by Purdue Global or other client institutions and of service providers that provide services similar to Kaplan's has resulted, and may continue to result, in additional enforcement actions, investigations and lawsuits by the ED, other federal agencies, Congress, state Attorneys General and state licensing agencies, or private plaintiffs. Recent enforcement actions have resulted in substantial liabilities, restrictions and sanctions and in some cases have led to the loss of Title IV eligibility and closure of institutions. The change of control of the executive branch and Congress in 2021 could increase the amount of regulation and scrutiny of service companies like Kaplan and online schools like Kaplan's client institutions, and has resulted in new regulations as described in part above. This increased activity and other current and future activity may result in further legislation, rulemaking and other governmental actions affecting the amount of student financial assistance for which Purdue Global's or other client institutions' students are eligible, or Kaplan's participation in Title IV programs as a third-party servicer to Purdue Global or such other client institutions. In addition, increased scrutiny and legislative proposals restricting the ability of entities like KNA that provide certain admissions related services to Title IV participating institutions under revenue sharing arrangements could impact KNA agreements. Such scrutiny could result in requests to Kaplan for information or negative publicity that could adversely affect KNA and its client institutions.

- **Changes in the Extent to Which Standardized Tests are Used in the Admissions Process by Colleges or Graduate Schools and Increased Competition Could Reduce Demand for KNA Supplemental Education Test Preparation Offerings.**

KNA Supplemental Education Exam Preparation provides courses that prepare students for a broad range of admissions examinations that are considered by colleges and graduate schools. Historically, colleges and graduate schools have required standardized tests as part of the admissions process. There has been some movement away from the historical reliance on standardized admissions tests among certain colleges, which have phased out admissions tests, are in the process of phasing out admissions tests or have adopted "test-optional" admissions policies. Moreover, as a part of a settlement in a lawsuit brought by students in 2019, a large public university will no longer use the SAT and ACT for admissions or scholarship decisions for its system of 10 schools. Reductions in the use of standardized tests in the college or graduate school admissions processes have had and could continue to have an adverse effect on KNA's operating results.

Additionally, KNA faces increased competition from competitors offering lower-cost or free test prep products that may be used by students to piece together alternatives to traditional comprehensive test prep programs. Kaplan's operating results may be adversely affected if student demand for KNA's traditional comprehensive programs shifts to KNA's lower-cost, stand-alone offerings, or if competitors offer lower-cost, stand-alone offerings or free test prep products that are more attractive to students than KNA's products.

- **Postponement and Cancellation of Examinations and Changes in the Extent to Which Licensing and Proficiency Examinations Are Used to Qualify Individuals to Pursue Certain Careers Could Reduce Demand for Kaplan's Offerings.**

A material portion of KNA's and KI's revenue comes from preparing individuals for licensing or technical proficiency examinations in various fields. Any significant relaxation or elimination of licensing or technical proficiency requirements in those fields served by KNA's and KI's businesses could negatively affect Kaplan's

operating results. As a result of the COVID-19 pandemic, a number of professional certification examinations have been canceled or permanently altered. While the impact of these changes on Kaplan's operations continues to improve relative to 2020, further changes and impacts on student timing due to the pandemic may impact Kaplan's results.

Risks Related to the Company's Television Broadcasting and Media Businesses

- **Changing Perceptions about the Effectiveness of Television Broadcasting in Delivering Advertising Could Adversely Affect the Profitability of Television Broadcasting.**

Historically, television broadcasting has been viewed as a cost-effective method of delivering various forms of advertising. There can be no guarantee that this historical perception will guide future decisions by advertisers. To the extent that advertisers shift advertising expenditures away from television to other media outlets, including digital distribution platforms, the profitability of the Company's television broadcasting business could be adversely affected.

- **Increased Competition Resulting from Technological Innovations in News, Information and Video Programming Distribution Systems and Changing Consumer Behavior Could Adversely Affect the Company's Operating Results.**

The continuing growth and technological expansion of internet-based services has increased competitive pressure on the Company's media businesses. Examples of such developments include delivery of programming via online platforms, including both ad-supported and subscription video programming services, technologies that enable users to fast-forward or skip advertisements and devices that allow users to consume content on demand and in remote locations while avoiding traditional commercial advertisements or cable and satellite subscriptions. Changing consumer behavior may also put pressure on the Company's media businesses to change traditional distribution methods. The Company obtains significant revenue from its retransmission consent agreements with traditional cable and satellite distributors. These payments are on a per-subscriber basis, so that payments to the Company may decrease as customers "cut the cord" and cancel their cable and satellite subscriptions. The Company also receives payments for distribution of its stations' signals on certain online "over-the-top" services; however, these revenues may be less than those received from traditional cable and satellite distribution. Anticipating and adapting to changes in technology and consumer behavior on a timely basis will affect the Company's media businesses' ability to continue to increase their revenue. The development and deployment of new technologies and changing consumer behavior have the potential to negatively and significantly affect the Company's media businesses in ways that cannot now be reliably predicted and that may have a material adverse effect on the Company's operating results.

- **Changes in the Nature and Extent of Government Regulations Could Adversely Affect the Company's Television Broadcasting Business and Other Businesses.**

The Company's television broadcasting business operates in a highly regulated environment. Complying with applicable regulations has significantly increased, and may continue to increase, the costs, and has reduced the revenues, of the business. Changes in regulations have the potential to negatively impact the television broadcasting business, not only by increasing compliance costs and reducing revenues through restrictions on certain types of advertising, limitations on pricing flexibility or other means, but also by possibly creating more favorable regulatory environments for the providers of competing services, including unregulated digital programming distribution platforms. In addition, changes to the FCC's rules governing broadcast ownership may affect the Company's ability to expand its television broadcasting business and/or may enable the Company's competitors to improve their market positions through consolidation. More generally, significant changes in applicable regulations could adversely affect the profitability and/or competitive positions of the Company's businesses.

- **Transition to New Technical Standards for Broadcast Television Stations May Alter the Competitive Environment in the Company's Stations' Markets or Cause the Company to Incur Increased Costs.**

The Company cannot predict how the market will evolve as the new broadcast television station technical standard, ATSC 3.0, is made available in a growing number of television markets. Equipment manufacturers began releasing certain TV set models with built-in ATSC 3.0-capable receivers in 2020, and an increasing number of external tuners or converter boxes are available, but ATSC 3.0-capable consumer devices are not yet widely available or in use in the U.S. As part of the voluntary transition, many station groups are beginning to test ATSC 3.0 streams. Notably, there is a large consortium led by Pearl TV (of which GMG is a member) that has been leading test trials in the Phoenix, Detroit, Portland and other markets. ATSC 3.0 streams are now available in more than 60 markets across the country. Competing stations that transition to ATSC 3.0 may increase competition for the Company's stations and/or create competitive pressure for the Company's stations to launch ATSC 3.0 streams. As noted above, GMG stations WDIV-TV, WKMG-TV, WSLS-TV and KPRC-TV have begun broadcasting ATSC 3.0 streams. The ongoing transition to ATSC 3.0 may cause the Company to incur substantial costs over time. More generally, the deployment of ATSC 3.0 may have other material effects on the Company's media businesses that cannot now be reliably predicted and that may have a material adverse effect on the Company's operating results.

- **Changes in MVPD Subscriber Numbers, Retransmission Consent Fees, and "Reverse Retransmission Consent" Payments to the Networks Could Adversely Affect the Company's Revenues.**

As the number of subscribers to traditional cable, satellite and telecommunications services declines, the Company faces the possibility of declining revenues under its existing retransmission agreements, which typically provide for payment to the Company on a per-subscriber basis. Those subscribers who "cut the cord" and move to internet-based streaming services may not generate the same revenues as the Company receives under its existing retransmission consent agreements, because the distribution agreements that apply to "virtual" MVPDs are negotiated by the national networks, and the per-subscriber fees paid to network-affiliated stations are determined by the network rather than by the Company in direct negotiation with those distributors.

At the same time, the Company's network affiliation agreements typically require payments to the networks with which GMG stations are affiliated in the form of "reverse retransmission consent fees," which require the Company to share a specified portion of retransmission consent fees with the respective networks. As reverse retransmission consent fee payments required to be paid to the networks escalate, the Company potentially could retain smaller shares of revenues generated by its retransmission consent agreements. The reverse retransmission consent fee obligations are sometimes structured as annual flat fees. In those cases, as the number of subscribers to traditional MVPD platforms decreases, the Company alone bears the costs and risks of declining retransmission consent revenues. Taken together, these factors together could adversely affect GMG's revenues and operating results.

- **Potential Liability for Intellectual Property Infringement Could Adversely Affect the Company's Businesses.**

The Company periodically receives claims from third parties alleging that the Company's businesses infringe on the intellectual property rights of others. It is likely that the Company will continue to be subject to similar claims, particularly as they relate to its media businesses. Other parts of the Company's business could also be subject to such claims. Addressing intellectual property claims is a time-consuming and expensive endeavor, regardless of the merits of the claims. In order to resolve such claims, the Company may have to change its method of doing business, enter into licensing agreements with copyright holders, or incur substantial monetary liability. It is also possible that one of the Company's businesses could be enjoined from using the intellectual property at issue, causing it to significantly alter its operations. Although the Company cannot predict the impact at this time, if any such claim is successful, the outcome would likely affect the business utilizing the intellectual property at issue and could have a material adverse effect on that business's operating results or prospects.

Risks Related to the Company's Manufacturing Businesses

- **Failure to Recruit and Retain Production Staff Needed to Meet Customer Demand Could Have a Material Adverse Effect on the Company's Manufacturing Businesses.**

The Company's manufacturing operations are experiencing a highly competitive market for production labor that may limit its ability to meet customer demand. If staffing cannot be hired at a cost-efficient wage rate relative to product pricing, volume will be impacted.

- **The Company May Be Subject to Liability Claims That Could Have a Material Adverse Effect on Its Business.**

The Company's manufacturing operations are subject to hazards inherent in manufacturing and production-related facilities. An accident involving these operations or equipment may result in losses due to personal injury; loss of life; damage or destruction of property, equipment or the environment; or a suspension of operations. Insurance may not protect the Company against liability for certain kinds of events, including those involving pollution or losses resulting from business interruption. Any damages caused by the Company's operations that are not covered by insurance, or are in excess of policy limits, could materially adversely affect the Company's results of operations, financial position or cash flows.

Risks Related to the Company's Healthcare Business

- **Extensive Regulation of the Healthcare Industry Could Adversely Affect the Company's Healthcare Businesses and Results of Operations.**

The home health and hospice industries are subject to extensive federal, state and local laws, with regulations affecting a wide range of matters, including licensure and certification, quality of services, qualifications of personnel, confidentiality and security of medical records, relationships with physicians and other referral sources, operating policies and procedures, and billing and coding practices. These laws and regulations change frequently, and the manner in which they will be interpreted is subject to change in ways that cannot be predicted.

Reimbursement for services by third-party payors, including Medicare, Medicaid and private health insurance providers, may decline, while authorization, audit and compliance requirements continue to add to the cost of providing those services.

Managed-care organizations, hospitals, physician practices and other third-party payors continue to consolidate in response to the evolving regulatory environment, thereby enhancing their ability to influence the delivery of healthcare services and decreasing the number of organizations serving patients. This consolidation could adversely impact GHG's businesses if they are unable to maintain their ability to participate in established networks. In addition, CSI Pharmacy and Weiss Medical both face risks from manufacturer supply shortages, competitive vertical integration and pricing power, and government intervention on drug pricing.

GHG is also subject to periodic and routine reviews, audits and investigations by federal and state government agencies and private payors, which could result in negative findings that adversely impact the business. The federal Centers for Medicare and Medicaid Services (CMS) increasingly uses third-party, for-profit contractors to conduct these reviews, many of which share in the amounts that CMS denies. These reviews, audits and investigations consume significant staff and financial resources and may take years to resolve.

- **Continued Nursing Staffing Shortages Could Adversely Affect the Growth of the Company's Healthcare Businesses.**

The country's severe shortage of nurses could adversely affect GHG's ability to meet customer demand and may impact its ability to take on new business. In addition, competition to attract new nurses necessitates offering increased wages and benefits, which increases costs.

- **Value-based Purchasing Could Negatively Impact Medicare Reimbursement.**

Both private and government payors are increasingly looking to value-based purchasing to lower costs. Value-based purchasing focuses on quality of outcomes and care efficiency, rather than quantity of care. Effective January 1, 2023, according to the 2022 Home Health final rule for Medicare home health providers, value-based purchasing will be expanded to all 50 states. Under the expanded model, home health agencies receive adjustments to their Medicare fee-for-service payments based on their performance against a set of quality measures, relative to their peers' performance. Performance on these quality measures in a specified year (performance year) impacts payment adjustments in a later year (payment year). CMS could also create a similar plan for hospice providers in the future. Private and government payors' implementation of value-based purchasing requirements could negatively impact Medicare reimbursement and have an adverse effect on GHG's financial condition, results of operations and overall cash flows.

Risks Related to the Company's Automotive Businesses

- **Termination or Non-renewal of a Dealership Agreement by an Automobile Manufacturer and Limitations on the Company's Ability to Acquire Additional Dealerships Could Adversely Affect the Company's Automotive Business and Results of Operations.**

The Company's automobile dealerships are dependent on maintaining strong relationships with manufacturers, and the Company's ownership and operation of automobile dealerships is subject to its ability to comply with various requirements established by automobile manufacturers. The Company's dealerships operate under separate agreements with each applicable automobile manufacturer. Manufacturers may terminate their agreements for a variety of reasons, including a dealership's failure to meet a manufacturer's standards for financial and sales performance, customer satisfaction, facilities and the quality of dealership management; and any unapproved change in ownership or management. These agreements also limit the Company's ability to acquire multiple dealerships of the same brand within a particular market and preclude the Company from establishing new dealerships within an area already served by another dealer of the same vehicle brand. In addition, dealerships controlled by related parties of the management team operating the Company's dealerships may restrict the Company's ability to acquire new dealerships within an area in which such dealerships operate. Manufacturers also have the right of first refusal if the Company seeks to sell dealerships and may limit the Company's ability to transfer ownership of a dealership without the prior approval of the manufacturer. Failure to maintain ownership of the dealerships in compliance with manufacturer agreements could constitute a breach of the agreements and could result in termination or non-renewal of existing dealer agreements. If one of the Company's manufacturers does not renew its dealer agreement or terminates the agreement, the Company's dealership would be unable to sell or distribute new vehicles or perform manufacturer authorized warranty service, which would adversely affect the Company's automotive business.

- **Changes Affecting Automobile Manufacturers Could Adversely Affect the Company's Automotive Business.**

The Company's dealerships are dependent on the products and services offered by the brand of automobiles that its dealerships sell. The ability of the Company's dealerships to sell and service these brands may be adversely affected by negative conditions faced by manufacturers such as negative changes to a manufacturer's financial condition, negative publicity concerning a manufacturer or vehicle model, declines in consumer demand or brand preferences, changes in consumer preferences driven by fuel price volatility, disruptions in production and delivery, including those caused by natural disasters or labor strikes, new laws or regulations, including more stringent fuel economy and greenhouse gas emission standards, and technological innovations in ride-sharing, electric vehicles and autonomous driving. The ability of the Company's dealerships to align with manufacturers and adapt to evolving consumer demand for electric vehicles could adversely affect new and used vehicle sales volumes, parts and service revenue and results of operations.

- **Changes to State Dealer Franchise Laws to Permit Manufacturers to Enter the Retail Market Directly and Technological Innovations Could Adversely Impact the Company's Traditional Dealership Model.**

Changes to state dealer franchise laws to permit the sale of new vehicles without the involvement of franchised dealers could adversely affect the Company's dealerships. Certain manufacturers have been challenging state dealer franchise laws in many states and some have expressed interest in selling directly to customers. The Company's dealership model could be adversely affected if new vehicle sales are allowed to be conducted on the internet without the involvement of franchised dealers.

- **Changes in a Manufacturer's Incentive Programs Could Adversely Affect the Dealerships' Sales Volume and Profit Margins**.

Automobile manufacturers offer various marketing and sales incentive programs to promote and support new vehicle sales. These programs include customer rebates, dealer incentives on new vehicles, employee pricing, manufacturer floor plan interest assistance, advertising assistance and product warranties. A reduction or discontinuation of a manufacturer's incentive programs could adversely affect vehicle demand and results of operations.

- **Changes in Economic Conditions and Vehicle Inventories Are Difficult to Predict and May Adversely Impact the Results of Operations of the Company's Dealerships.**

Sales of new and used vehicles are cyclical. Historically there have been periods of downturns characterized by weak demand due to general economic conditions, excess supplies, consumer confidence, discretionary income and credit availability. Recently, supply shortages have led to a period of higher average new and used selling prices as a result of strong consumer demand and inventory shortages related to supply chain disruptions and production delays at vehicle manufacturers. These conditions may deteriorate in the future. Changes in these conditions could materially adversely impact sales and related margins of new and used vehicles, parts and repair and maintenance services.

Risks Related to the Company's Other Businesses

- **Current Macroeconomic Conditions May Adversely Affect Revenue Opportunities for Leaf's Businesses.**

Global and regional business, macroeconomic and geopolitical conditions have had, and may continue to have, an adverse impact on advertising revenue. Historically, in times of economic uncertainty, advertising budgets are generally reduced as advertisers seek to reduce expenses while they assess an uncertain economic climate. In 2022, the effects of inflation, rising interest rates and broader economic uncertainty contributed to a decrease in advertising spend. In addition, art is often considered a discretionary expenditure, and as such, this economic uncertainty may contribute to a decrease in sales. Leaf expects such trends to continue in 2023.

- **If Leaf is Unable to Successfully Drive Traffic to its Marketplaces and Media Properties and Expand its Customer Base for its Marketplaces, its Business and Results of Operations Would be Adversely Affected.**

In order for Leaf's businesses to grow, Leaf must attract new visitors and customers to its marketplaces and media properties and retain its existing visitors and customers. Leaf's success in attracting traffic to its media properties and converting these visitors into repeat users depends, in part, upon Leaf's ability to identify, create and distribute high-quality and reliable content through engaging products and Leaf's ability to meet rapidly changing consumer demand. Leaf may not be able to identify and create the desired content or produce an engaging user experience in a cost-effective or timely manner, if at all. Leaf depends on search engines, primarily Google, to direct a significant amount of traffic to its media and marketplace properties, and Leaf utilizes search engine optimization efforts to help generate search referral traffic to its media and marketplace properties. Changes in the methodologies or algorithms used by search engines to display results could cause Leaf's properties to receive less favorable placements in the search results. Google and other search engines regularly

deploy changes to their search engine algorithms. The changes to search engine algorithms by Google and other search engines have resulted in the past, and may result in the future, in substantial declines in traffic to certain of the Leaf's media properties, which contributed to revenue declines from Leaf's media properties. For example, in the third quarter of 2022, Google made a search engine update that Leaf believes negatively impacted the volume of referral traffic to older lifestyle content, impacting LiveStrong.com, Hunker.com, as well as other Leaf Group media properties. If Leaf is unable to successfully modify its search engine optimization practices in response to changes regularly implemented by search engine algorithms and in search query trends, or if Leaf is unable to generate increased or diversified traffic from other sources such as social media, email, direct navigation and online marketing activities, Leaf could experience substantial declines in traffic to its marketplace properties, its media properties and to its partners' media properties, which would adversely impact Leaf's business and results of operations. One of the key factors to growing the marketplace platforms for Society6 Group and Saatchi Art Group is expanding their new and repeat customer base. Their ability to attract new customers, some of whom may already purchase similar products from competitors, depends in part on Leaf's ability to successfully drive traffic to Leaf's marketplaces using social media platforms, email marketing campaigns and promotions, paid referrals and search engines.

- **If Leaf is Unable to Effectively Distribute its Media Content on Social Media Platforms or Effectively Optimize its Mobile Solutions in Order to Improve User Experience or Comply with Requirements of Leaf's Advertising Partners, Leaf's Business and Results of Operation Could Be Negatively Impacted.**

The number of people who access the internet through mobile devices such as smartphones and tablets, rather than through desktop or laptop computers, has increased substantially in recent years. Additionally, individuals are increasingly consuming publisher content through social media platforms. If Leaf cannot effectively distribute its media content, products and services on these devices or through these platforms, Leaf could experience a decline in visits and traffic and a corresponding decline in revenue. The significant increase in consumption of Leaf's media content on mobile devices and through social media platforms depresses revenue per one thousand visits, or RPVs. As a result of these factors, the increasing use of mobile devices and social media platforms to access Leaf's content could negatively impact its business and results of operations.

Further, consumers are increasingly conducting online shopping on mobile devices, including smartphones and tablets, rather than on desktop or laptop computers. Although Leaf continually strives to improve the mobile experience for users accessing its marketplaces through mobile devices, the smaller screen size and reduced functionality associated with some mobile device interfaces may make the use of Leaf's marketplace platforms more difficult or less appealing to its members. Historically, visits to Leaf's marketplaces on mobile devices have not converted into purchases as often as visits made through desktop or laptop computers, and the average order value for mobile transactions has been lower than desktop transactions. If conversion rates and average order values for mobile transactions on Leaf's marketplaces do not increase, the revenue and results of operations of Society6 Group and Saatchi Art Group may be adversely affected.

- **Leaf's Businesses Face Significant Competition, Which Leaf Expects Will Continue to Intensify, and Leaf May Not Be Able to Maintain or Improve its Competitive Position or Market Share.**

Leaf's Society6 Group and Saatchi Art Group businesses compete with a wide variety of online and brick-and-mortar companies selling comparable products. Leaf expects competition to continue to intensify given the low barrier of entry into online channels and the increase in conversion and competition between online and offline businesses. Leaf's Media Group faces intense competition from a wide range of competitors. Leaf's current principal competitors include online media properties, some of which have much larger audiences than Leaf. Leaf also competes with companies and individuals that provide specialized consumer information online, including through enthusiast websites, message boards and blogs. Many of Leaf's current and potential competitors enjoy substantial competitive advantages, such as greater brand recognition, greater technical capabilities, access to larger customer bases and, in some cases, the ability to combine their online marketing products with traditional offline media such as newspapers or magazines. These companies may use these advantages to offer similar products and services at a lower price, develop different products to compete with

Leaf's current offerings and respond more quickly and effectively than Leaf can to new or changing opportunities, technologies, standards or customer requirements. For example, if Google chose to compete more directly with Leaf as a publisher of similar content, Leaf may face the prospect of the loss of business or other adverse financial consequences due to Google's significantly greater customer base, financial resources, distribution channels and patent portfolio.

- **Failure to Recruit and Retain Employees in the Company's Restaurants Could Adversely Impact the Company's Restaurant Business.**

Historically, competition among restaurant companies for qualified management and staff has been very high. The Company's ability to recruit and retain managers and staff to operate the Company's restaurants is critical to a customer's dining experience. Failure to recruit and retain employees, low levels of unemployment or high turnover levels could negatively affect the Company's restaurant business.

- **Food-Borne Illness Concerns and Damage to the Company's Reputation Could Harm the Company's Restaurant Business.**

Historically, reports of food-borne illness or food safety issues at restaurants, even if caused by food suppliers or distributors, have had negative effects on restaurant sales. Because food safety issues could be experienced at the source by food suppliers or distributors, food safety could, in part, be out of the Company's control. Even instances of food-borne illness at a location served by one of the Company's competitors could result in negative publicity regarding the food service industry generally and could negatively impact restaurant revenue. Regardless of the source or cause, negative publicity about food-borne illness or other food safety issues could adversely impact the Company's reputation. Similarly, publicity about litigation, violence, complaints or government investigations could have a negative effect on restaurant sales.

- **Concentration of the Company's Restaurants in the Washington, D.C. Region Subjects the Company's Restaurant Business to Regional Economic Conditions.**

The concentration of the Company's restaurants in the Washington, D.C. region subjects it to adverse economic conditions and trends in the region that are out of the Company's control. For example, increases in the level of unemployment, a temporary government shutdown or a decrease in tourism would decrease customers' disposable income available for discretionary spending. These and other national, regional and local economic pressures could result in decreases in customer traffic and lower sales and profits.

Risks Related to the Company's Stock Ownership and Operations

- **As a Controlled Company, the Rights of Class B Common Stockholders are Limited**

The Company has two classes of shares, Class A Common Stock and Class B Common Stock. Class B Common Stock has limited voting rights, including the right to elect 30% of the Company's Board of Directors, to vote on the reservation of shares for option grants and on the acquisition of the stock or assets of other companies under certain circumstances. The descendants of Katharine Graham and trusts for the benefit of those descendants own the majority of the shares of Class A Common Stock and have the right to vote for 70% of the Board of Directors and to vote on all other matters. As a result, control of the Company has been and is expected to remain with members of the Graham family. In addition, the Company is a "controlled company" under the corporate governance rules of the New York Stock Exchange (NYSE) and as such, the Company is exempt from certain corporate governance requirements of the NYSE.

- **Pandemics or Other Outbreaks of Disease, such as the COVID-19 Pandemic, Have Had, and Future Outbreaks, Could Have, Adverse Impacts on the Company's Business, Results of Operations and Cash Flows.**

Pandemics and other disease outbreaks, such as the COVID-19 pandemic, have materially affected, and may in the future, materially adversely affect the Company's businesses, including the demand for its products and

services. As a result of the COVID-19 pandemic, travel restrictions and school closures impeded the ability of students to travel to undertake overseas study resulting in reduced enrollments for programs offered by Kaplan International, reduced demand for student housing and delays and cancellations of standardized tests. The COVID-19 pandemic also led to plant closures and disruptions in the Company's supply chains, declines in demand for products and advertising, closures of the Company's restaurants and live art fairs, and increased competition for labor and absenteeism affecting the Company's media, manufacturing, healthcare, automotive and other businesses. The adverse impact of a new health crisis could include, and in the past has included, reduced demand for the Company's products and services, supply chain disruptions, asset impairment charges, labor disruptions and manufacturing, restaurant and other closures. Additionally, to the extent a pandemic or other health crisis adversely affects the Company's business operations, financial condition or operating results, it may also have the effect of heightening many of the other risks described in this "Risk Factors" section.

- **Failure to Comply with Environmental and Health and Safety Laws Applicable to the Company's Operations Could Negatively Impact the Company's Businesses.**

The Company's operations are subject to extensive federal, state and local laws and regulations relating to the environment, as well as health and workplace safety, including those set forth by the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA) and state and local regulatory authorities in the U.S. as well as similar laws and regulations internationally where the Company operates. Such laws and regulations affect operations and require compliance with various environmental registrations, licenses, permits, inspections and other approvals. In the U.K., the Company will be subject to new registration requirements under the U.K. Building Safety Act in 2022 with respect to its dormitories as well as compliance with existing U.K. and local legislation regarding licensing occupancy of such dormitories. The Company incurs substantial costs to comply with these regulations, and any failure to comply may expose the Company to civil, criminal and administrative fees, fines, penalties and interruptions in operations that could have a material adverse impact on the Company's results of operations, financial position or cash flows.

Environmental laws and regulations to which the Company is subject include those governing discharges into the air and water, the operation and removal of above-ground and underground storage tanks, the use, handling, storage and disposal of hazardous substances and other materials, and the investigation and remediation of environmental contamination at facilities that are owned or operated. The Company may be subject to liability, for example, in the automotive business, because the business involves the generation, use, handling and contracting for recycling or disposal of hazardous or toxic substances or wastes, including environmentally sensitive materials such as motor oil, filters, transmission fluid, antifreeze, refrigerant, batteries, solvents, lubricants, tires and fuel. In addition, climate change could cause increases in hurricanes, floods, wildfires, and other risks that could produce losses affecting our businesses. Although in connection with certain acquisitions, the Company has obtained indemnification for certain environmental liabilities and insurance policies, such rights and policies may not be sufficient to reimburse the Company for all losses that it might incur. The Company has incurred, and will continue to incur, capital and operating expenditures and other costs in complying with such laws and regulations and changes to such regulations, including any new regulations related to climate change, could give rise to additional compliance or remedial costs.

- **Failure to Successfully Integrate Acquired Businesses Could Negatively Affect the Company's Business.**

Acquisitions involve various inherent risks and uncertainties, including difficulties in efficiently integrating the service offerings, accounting and other administrative systems of an acquired business; the challenges of assimilating and retaining key personnel; the consequences of diverting the attention of senior management from existing operations; the possibility that an acquired business does not meet or exceed the financial projections that supported the purchase price; and the possible failure of the due diligence process to identify significant business risks or liabilities associated with the acquired business. A failure to effectively manage growth and integrate acquired businesses could have a material adverse effect on the Company's operating results.

- **Changes in Business Conditions Have Caused and May in the Future Cause Goodwill and Other Intangible Assets to Become Impaired.**

Goodwill generally represents the purchase price paid in excess of the fair value of net tangible and intangible assets acquired in a business combination. Goodwill is not amortized and remains on the Company's balance sheet indefinitely unless there is an impairment or a sale of a portion of the business. Goodwill is subject to an impairment test on an annual basis and when circumstances indicate that an impairment is more likely than not. Such circumstances include an adverse change in the business climate for one of the Company's businesses or a decision to dispose of a business or a significant portion of a business. Each of the Company's businesses faces uncertainty in its business environment due to a variety of factors, including challenges in operating environments created by the COVID-19 pandemic and changes in demand for products and services. In the fourth quarter of 2022, the Company recorded a goodwill impairment of $129 million at Leaf. Additional declines in revenue could result in adverse changes in projections for future operating results or other key assumptions, such as projected revenue, profit margin, capital expenditures or cash flows associated with fair value estimates and could lead to additional future impairments, which could be material. The Company may experience other unforeseen circumstances that adversely affect the value of the Company's goodwill or intangible assets and trigger an evaluation of the amount of the recorded goodwill and intangible assets. There also exists a reasonable possibility that changes to the discounted cash-flow model used to perform the quantitative goodwill impairment review, including a decrease in the assumed projected cash flows or long-term growth rate, or an increase in the discount rate assumption, could result in an impairment charge. Future write-offs of goodwill or other intangible assets as a result of an impairment in the business could materially adversely affect the Company's results of operations and financial condition.

Risks Related to Cybersecurity, Information Technology and Data Management

- **System Disruptions and Security Threats to the Company's Information Technology Infrastructure Could Have a Material Adverse Effect on Its Businesses and Results of Operations.**

The Company relies extensively on information technology systems, networks and services, including internet sites, data hosting and processing facilities and tools and other hardware, software and technical platforms, some of which are managed, hosted, provided and/or used by third parties or their vendors, to assist in conducting the Company's business.

The Company's systems and the third-party systems on which it relies are subject to damage or interruption from a number of causes, including but not limited to power outages; computer and telecommunications failures; computer viruses; industry-wide software supply chain vulnerabilities, security breaches; cyberattacks, including phishing and other forms of social engineering, hacking, denial-of-service attacks, cyber extortion, including the use of ransomware and other actions or attempts to exploit vulnerabilities; catastrophic events such as fires, floods, earthquakes, tornadoes and hurricanes; infectious disease outbreaks (such as COVID-19); acts of war or terrorism; and design or usage errors by our employees, contractors or third-party service providers. The techniques used by computer hackers and cyber criminals to obtain unauthorized access to data or to sabotage computer systems change frequently, continue to grow in sophistication and volume, and may not be detected until after an incident has occurred. Although the Company and the third-party service providers seek to maintain their respective systems effectively and to successfully address the risk of compromise of the integrity, security and consistent operations of these systems, such efforts may not be successful. As a result, the Company or its service providers could experience errors, interruptions, delays or cessations of service in key portions of the Company's information technology infrastructure, which could significantly disrupt its operations and be costly, time-consuming and resource-intensive to remedy. Any security breach or unauthorized access also could result in a misappropriation of the Company's proprietary information or the proprietary information of the Company's users, customers or partners, which could result in significant legal and financial exposure and damage to the Company's reputation. If an actual or perceived breach of the Company's security occurs, or if the Company's consumer facing sites become the subject of external attacks that affect or disrupt service or availability, the market perception of the effectiveness of the Company's security measures could be harmed and the Company

could lose users, customers, advertisers or partners, all of which could have a material adverse effect on the Company's business, financial condition and results of operations. Any security breach at a company providing services to the Company or the Company's users, including third-party payment processors, could have similar effects and the Company may not be fully indemnified for the costs it may incur as a result of any such breach. To the extent that such vulnerabilities require remediation, such remedial measures could require significant resources and may not be implemented before such vulnerabilities are exploited. As the cybersecurity landscape evolves, the Company may also find it necessary to make significant further investments to protect data and infrastructure, including continuing to evaluate control changes and investments needed to support an increased remote workforce. Any of these events could have a material adverse effect on the Company's businesses and results of operations. Sustained or repeated system failures or security breaches that interrupt the Company's ability to process information in a timely manner or that result in a breach of proprietary or personal information could have a material adverse effect on the Company's operations and reputation. In addition, minor incidents, even if dealt with promptly, could lead to severe legal, financial and reputational issues, such as investigations by authorities, enforcement, lawsuits and negative publicity, and a collection of incidents, though not considered material individually at the time they occur, may be deemed material later in the aggregate.

- **Failure to Comply with Privacy Laws or Regulations Could Have an Adverse Effect on the Company's Businesses.**

Various U.S. federal, state and international laws and regulations govern the collection, use, retention, sharing and security of personal data. This area of the law is evolving, and interpretations of applicable laws and regulations differ. Legislative activity in the privacy area may result in new laws that are relevant to the Company's operations, including restrictions on the collection, use and sharing of personal data that could limit our ability to use the data for marketing or advertising, and could result in exposure to material liability. For example, data privacy regulations adopted by the European Union known as the General Data Protection Regulation (GDPR), became effective in May 2018. These regulations require certain of the Company's operations to meet extensive requirements regarding the handling of personal data, including its use, protection and transfer. In addition, the GDPR provides the legal right for persons whose data is stored to request access to or correction or deletion of their personal data, among other rights. Failure to meet the applicable requirements in the GDPR could result in fines of up to 4% of the Company's annual global revenues. In addition to the GDPR in Europe, new privacy laws and regulations are rapidly developing and being implemented elsewhere around the globe, including amendments to the scope, penalties and other provisions of existing data protection laws. Failure to comply with these international data protection laws and regulations could have a negative impact on the Company's reputation and subject the Company to significant fines, penalties or other liabilities or restrict the Company's ability to continue operating its existing business processes, all of which may increase the cost of operations, reduce customer growth, or otherwise harm the Company's business.

The California Consumer Privacy Act of 2018 (CCPA), which became effective on January 1, 2020, provided a new private right of action for data breaches and requires companies that process personal information pertaining to California residents to make disclosures to consumers about their data collection, use and sharing practices and allows consumers to opt out of certain data sharing with third parties. The enforcement of the CCPA by the California Attorney General commenced on July 1, 2020. In November 2020, the California Privacy Rights Act (CPRA) was approved by California voters, and went into effect on January 1, 2023. The CPRA includes new requirements that are not in the CCPA. Similar laws include Virginia's, that went into effect January 1, 2023; Colorado and Connecticut's, effective July 1, 2023; and Utah's effective December 31, 2023. In addition, data privacy bills have been introduced in various U.S. state legislatures, including, but not limited to Washington, New York and Florida. There are also bills that have been introduced at the U.S. federal level. The passage of any additional laws could result in further uncertainty and cause the Company to incur additional costs and expenses in order to comply. Compliance with the GDPR, the CCPA, the CPRA and other applicable international and U.S. privacy laws can be costly and time-consuming. If the Company fails to properly respond to security breaches of its or its third-party's information technology systems or fails to properly respond to an individual's requests under these laws, the Company could experience damage to its reputation, adverse

publicity, loss of consumer confidence, reduced sales and profits, complications in executing the Company's growth initiatives and regulatory and legal risk, including criminal penalties or civil liabilities.

Claims of failure to comply with the Company's privacy policies or applicable laws or regulations could form the basis of governmental or private party actions against the Company and could result in significant penalties. Additionally, evolving concerns regarding data privacy may cause the Company's customers and potential customers to resist providing the data necessary to allow the Company to deliver its solutions effectively. Even the perception that personal information is not satisfactorily protected or does not meet regulatory requirements could inhibit sales and any failure to comply with such laws and regulations could lead to significant fines, penalties or other liabilities. Such claims and actions could cause damage to the Company's reputation and could have an adverse effect on the Company's businesses.

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties.

The Company leases space for its corporate offices in Arlington, VA.

In the education segment, Kaplan owns a total of seven properties, including six in the U.S. totaling approximately 48,736 square feet and one property in South Kensington, London, U.K. used for school and dormitory space. Kaplan also leases facilities used for offices, instruction and student dormitories in the U.S., the U.K., Ireland, Germany, France, Switzerland, Spain, Singapore, Australia and India. Kaplan International entered into a 135-year lease of land in Liverpool, U.K. on which it completed the construction of college and/or dormitory space that opened in January 2020. Kaplan International's other significant space is dormitory space leased in Nottingham, Glasgow, Bournemouth and Brighton, U.K.

In the television broadcast segment, Graham Media Group owns all six of its studio facilities in Houston, TX, Detroit, MI, Orlando, FL, San Antonio, TX, Jacksonville, FL and Roanoke, VA. GMG owns the tower facilities in its San Antonio, TX, Detroit, MI, Roanoke, VA markets and jointly owns the transmitter facilities in Jacksonville, FLA, Orlando, FL and Houston, TX.

In the healthcare segment, Graham Healthcare Group leases 50 facilities for nursing and other office space across 15 states to support its home health, hospice, pharmacy infusion, physician practices and behavioral services and leases 10 facilities through its joint ventures with health systems and physician groups. GHG also owns two properties that are used for pharmacy infusion services (Nash, TX) and home health and hospice administrative services (Lapeer, MI).

In the manufacturing segment, Hoover owns 10 properties in GA, AR, VA, MI, CA, PA, NC, WV, FL and TX; Dekko owns 5 properties in IN, TX, AL and Juarez, Mexico; and Joyce/Dayton owns 3 properties in OH and IN, which are used for manufacturing, warehouse and office space. The remaining office and manufacturing facilities are leased, including one manufacturing facility in Monterrey, Mexico.

In the automotive segment, Graham Automotive owns properties for its Honda of Tysons Corner dealership, in VA, Toyota of Woodbridge dealership in VA and Chrysler-Dodge-Jeep-Ram of Woodbridge in VA. It leases 10 additional properties that serve as the sales and service departments for its Lexus of Rockville, Ourisman Jeep and Ford of Manassas dealerships.

The businesses that comprise the Company's other businesses lease space for their operations, including office space and retail locations in DC, MD, VA, NY, NJ, IL, GA, MA and PA, and manufacturing facilities in KY and NJ for Framebridge; restaurant facilities in DC, MD, and VA for Clyde's; office space in NY and DC for Slate; office space in DC for Foreign Policy; and office space in CA, the U.K. and Australia for Leaf.

The Company considers its properties suitable for the conduct of its respective businesses and adequate for its current use. The Company believes that suitable additional or alternative space is available at commercially reasonable terms as leases expire or premises become unavailable. However, it recognizes that replacements for student dormitory space leased by Kaplan International may be difficult to obtain due to high demand and alternative transmitter facilities could be costly and require a significant amount of time to construct.

Item 3. Legal Proceedings.

Information with respect to legal proceedings may be found in Note 18, “Contingencies and Other Commitments—Litigation, Legal and Other Matters” to the consolidated financial statements in Part II of this Annual Report, which is incorporated herein by reference.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information and Holders

The Company’s Class B Common Stock is traded on the New York Stock Exchange under the symbol “GHC.” The Company’s Class A Common Stock is not publicly traded.

At January 31, 2023, there were 27 holders of record of the Company’s Class A Common Stock and 322 holders of record of the Company’s Class B Common Stock.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

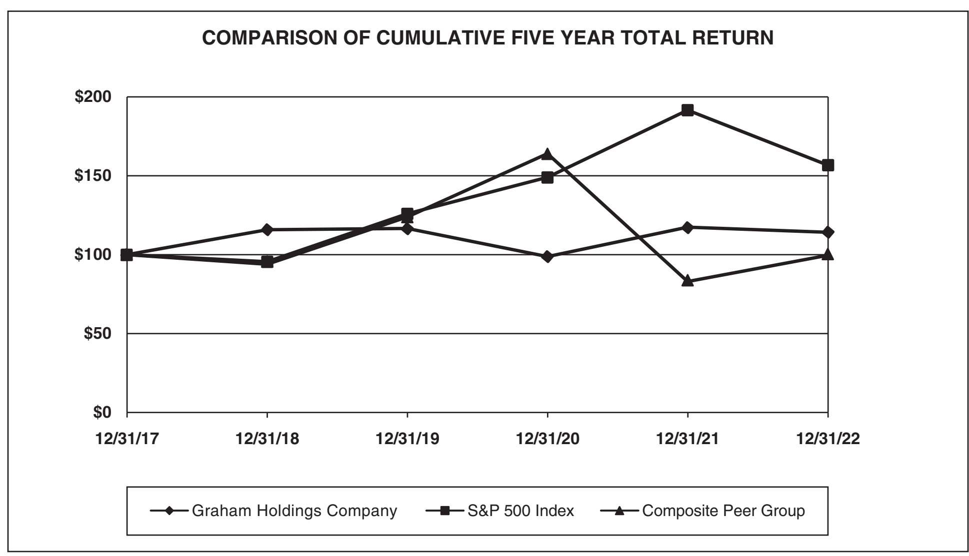
During the quarter ended December 31, 2022, the Company purchased shares of its Class B Common Stock as set forth in the following table:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan*	Maximum Number of Shares That May Yet Be Purchased Under the Plan*
2022				
October 1 - 31	13,135	$560.83	13,135	163,499
November 1 - 30	7,064	643.39	7,064	156,435
December 1 - 31	8,014	610.64	8,014	148,421
Total	28,213	$595.65	28,213	

* On September 10, 2020, the Company’s Board of Directors authorized the Company to purchase, on the open market or otherwise, up to 500,000 shares of its Class B Common Stock. There is no expiration date for this authorization. All purchases made during the quarter ended December 31, 2022, were open market transactions and some of these shares were purchased under a 10b5-1 plan.

Performance Graph

The following graph is a comparison of the yearly percentage change in the Company's cumulative total shareholder return with the cumulative total return of the Standard & Poor's 500 Stock Index (S&P 500 Index) and a custom peer group index comprised of a composite group of education and television broadcasting companies. The Standard & Poor's 500 Stock Index is comprised of 500 U.S. companies in the industrial, transportation, utilities and financial industries and is weighted by market capitalization. The custom peer group of composite companies includes Adtalem Global Education Inc., Chegg, Inc., The E.W. Scripps Company, Grand Canyon Education Inc., Nexstar Media Group Inc., Gray Television Inc., New Oriental Education & Technology Group Inc., Pearson plc and Tegna Inc. The graph reflects the investment of $100 on December 31, 2017, in the Company's Class B Common Stock, the Standard & Poor's 500 Stock Index and the custom peer group index of composite companies. For purposes of this graph, it has been assumed that dividends were reinvested on the date paid in the case of the Company, and on a quarterly basis in the case of the Standard & Poor's 500 Index and the custom peer group index of composite companies.



December 31	2017	2018	2019	2020	2021	**2022**
Graham Holdings Company	100.00	115.78	116.43	98.60	117.58	**114.03**
S&P 500 Index	100.00	95.62	125.72	148.85	191.58	**156.88**
Composite Peer Group	100.00	93.85	123.85	164.01	82.89	**99.74**

Item 6. Reserved.

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

See the information contained under the heading "Management's Discussion and Analysis of Results of Operations and Financial Condition," which is included in this Annual Report on Form 10-K and listed in the index to financial information on page 61 hereof.

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

The Company is exposed to market risk in the normal course of its business due primarily to its ownership of marketable equity securities, which are subject to equity price risk; to its borrowing and cash-management activities, which are subject to interest rate risk; and to its non-U.S. business operations, which are subject to foreign exchange rate risk.

Equity Price Risk. The Company has common stock investments in several publicly traded companies (as discussed in Note 4 to the Company's Consolidated Financial Statements) that are subject to market price volatility. The fair value of these common stock investments totaled $609.9 million at December 31, 2022.

Interest Rate Risk. The Company manages the risk associated with interest rate movements through the use of a combination of variable and fixed-rate debt.

At December 31, 2022, the Company had $400 million principal amount of 5.75% unsecured fixed-rate notes due June 1, 2026 (the Notes). At December 31, 2022, the aggregate fair value of the Notes, based upon quoted market prices, was $395.1 million. There were no earnings or liquidity risks associated with the Company's Notes. The fair value of the Notes varies with fluctuations in market interest rates. A 100 basis point decrease in market interest rates would increase the fair value of the Notes by $5.3 million at December 31, 2022 using a yield to par call. A 100 basis point increase in market interest rates would decrease the fair value of the Notes by $5.2 million at December 31, 2022, using a yield to par call. The Company also had approximately $11 million of other fixed-rate debt, primarily relating to the healthcare business (as discussed in Note 11 to the Company's Consolidated Financial Statements).

At December 31, 2022, the Company had approximately $388 million of variable-rate debt, including floor plan facility obligations. Approximately $50.2 million of this debt is hedged by an interest rate swap. The Company is subject to earnings and liquidity risks for changes in the interest rate on the unhedged portion of this debt. A 100 basis point increase in the applicable floating rates for the unhedged portions of our variable-rate debt would increase annual interest expense by approximately $3.4 million.

Foreign Exchange Rate Risk. The Company is exposed to foreign exchange rate risk primarily at its Kaplan international operations, and the primary exposure relates to the exchange rate between the U.S. dollar and the British pound, the Australian dollar, and the Singapore dollar. In 2022, 2021 and 2020 the Company reported net foreign currency losses of $2.0 million, $0.2 million and $2.2 million, respectively.

If the values of the British pound, the Australian dollar, and the Singapore dollar relative to the U.S. dollar had been 10% lower than the values that prevailed during 2022, the Company's pre-tax income for 2022 would have been approximately $8 million lower. Conversely, if such values had been 10% higher, the Company's reported pre-tax income for 2022 would have been approximately $8 million higher.

Item 8. Financial Statements and Supplementary Data.

See the Company's Consolidated Financial Statements at December 31, 2022, and for the periods then ended, together with the report of PricewaterhouseCoopers LLP thereon, which are included in this Annual Report on Form 10-K and listed in the index to financial information on page 61 hereof.

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

Not applicable.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

An evaluation was performed by the Company's management, with the participation of the Company's Chief Executive Officer (principal executive officer) and the Company's Chief Financial Officer (principal financial officer), of the effectiveness of the Company's disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)), as of December 31, 2022. Based on that evaluation, the Company's Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and

procedures, as designed and implemented, are effective in ensuring that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, in a manner that allows timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

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

The Company's management assessed the effectiveness of internal control over financial reporting as of December 31, 2022. In making this assessment, management used the criteria set forth in *Internal Control - Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in 2013. Management has concluded that as of December 31, 2022, the Company's internal control over financial reporting was effective based on these criteria.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2022, has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report included herein.

Changes in Internal Control Over Financial Reporting

There has been no change in the Company's internal control over financial reporting during the quarter ended December 31, 2022, that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

Item 9B. Other Information.

Not applicable.

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

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information contained under the heading "Executive Officers" in Item 1 hereof and the information contained under the headings "Nominees for Election by Class A Shareholders," "Nominees for Election by Class B Shareholders," "Audit Committee" and "Section 16(a) Beneficial Ownership Reporting Compliance" in the definitive Proxy Statement for the Company's 2023 Annual Meeting of Stockholders is incorporated herein by reference thereto.

The Company has adopted codes of conduct that constitute "codes of ethics" as that term is defined in paragraph (b) of Item 406 of Regulation S-K and that apply to the Company's principal executive officer, principal financial officer, principal accounting officer or controller and to any persons performing similar functions. Such codes of conduct are posted on the Company's website, the address of which is ghco.com, and the Company

intends to satisfy the disclosure requirements under Item 5.05 of Form 8-K with respect to certain amendments to, and waivers of the requirements of, the provisions of such codes of conduct applicable to the officers and persons referred to above by posting the required information on its website.

In addition to the certifications of the Company's Chief Executive Officer and Chief Financial Officer filed as exhibits to this Annual Report on Form 10-K, on May 31, 2022, the Company's Chief Executive Officer submitted to the New York Stock Exchange the annual certification regarding compliance with the NYSE's corporate governance listing standards required by Section 303A.12(a) of the NYSE Listed Company Manual.

Item 11. Executive Compensation.

The information contained under the headings "Director Compensation," "Compensation Committee Interlocks and Insider Participation," "Executive Compensation" and "Compensation Committee Report" in the definitive Proxy Statement for the Company's 2023 Annual Meeting of Stockholders is incorporated herein by reference thereto.

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

The information contained under the heading "Stock Holdings of Certain Beneficial Owners and Management" in the definitive Proxy Statement for the Company's 2023 Annual Meeting of Stockholders is incorporated herein by reference thereto.

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

The information contained under the headings "Transactions With Related Persons, Promoters and Certain Control Persons" and "Controlled Company" in the definitive Proxy Statement for the Company's 2023 Annual Meeting of Stockholders is incorporated herein by reference thereto.

Item 14. Principal Accounting Fees and Services.

The information contained under the heading "Audit Committee Report" in the definitive Proxy Statement for the Company's 2023 Annual Meeting of Stockholders is incorporated herein by reference thereto.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

The following documents are filed as part of this report:

1. ***Financial Statements.*** As listed in the index to financial information on page 61 hereof.
2. ***Exhibits.*** As listed in the index to exhibits on page 57 hereof.

Item 16. Form 10-K Summary.

Not applicable.

INDEX TO EXHIBITS

Exhibit Number	Description
2.1	Contribution and Transfer Agreement, dated April 27, 2017, by and among Kaplan Higher Education, LLC, Iowa College Acquisition, LLC, Purdue University and Purdue New U, Inc. (incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed April 27, 2017).**
3.1	Restated Certificate of Incorporation of the Company dated November 13, 2003 (incorporated by reference to Exhibit 3.1 to the Company's Annual Report on Form 10-K for the fiscal year ended December 28, 2003).
3.2	Certificate of Amendment, effective November 29, 2013, to the Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed November 29, 2013).
3.3	By-Laws of the Company as amended and restated through November 29, 2013 (incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed November 29, 2013).
4.1	Senior Notes Indenture dated as of May 30, 2018, between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K dated May 30, 2018).
4.2	First Supplemental Indenture, dated as of March 24, 2020, among Graham Healthcare Group, Inc., a Delaware corporation, a subsidiary of the Company, and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2020).
4.3	Second Supplemental Indenture, dated as of January 6, 2022, among Graham Automotive LLC, a Delaware limited liability company, a subsidiary of Graham Holdings Company, a Delaware corporation, and The Bank of New York Mellon Trust Company, N.A., as trustee (incorporated by reference to Exhibit 4.3 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021).
4.4	Description of the Company's Securities (incorporated by reference to Exhibit 4.2 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2019).
10.1	Amended and Restated Five Year Credit Agreement, dated as of May 30, 2018, among the Company, and the foreign borrowers from time to time party thereto, and certain of its domestic subsidiaries as guarantors, the several lenders from time to time party thereto, Wells Fargo Bank, National Association, as Administrative Agent and JPMorgan Chase Bank, N.A., as Syndication Agent (incorporated by reference to Exhibit 4.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018).
10.2	First Amendment, dated as of November 23, 2021, to Amended and Restated Five Year Credit Agreement, dated as of May 30, 2018, among the Company, and the foreign borrowers from time to time party thereto, and certain of its domestic subsidiaries as guarantors, the several lenders from time to time party thereto, Wells Fargo Bank, National Association, as Administrative Agent and JPMorgan Chase Bank, N.A., as Syndication Agent (incorporated by reference to Exhibit 10.2 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2021).
10.3	Second Amended and Restated Five Year Credit Agreement, dated as of May 3, 2022, among the Company, Kaplan U.K. Limited, and the foreign borrowers from time to time party thereto, and certain of its domestic subsidiaries as guarantors, the several lenders from time to time party thereto, Wells Fargo Bank, National Association, as Administrative Agent and JPMorgan Chase Bank, N.A., as Syndication Agent (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022).

Exhibit Number	Description
10.4	Transition and Operations Support Agreement, dated March 22, 2018, by and among Kaplan Higher Education, LLC, Iowa College Acquisition, LLC and Purdue University Global, Inc., with Purdue University as a party to the Transition and Operations Support Agreement solely for the purposes of being bound by the Purdue Provisions (as defined therein) (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K dated March 22, 2018).**+
10.5	First Amendment, dated as of July 29, 2019, to the Transition and Operations Support Agreement, dated March 22, 2018, by and among Kaplan Higher Education, LLC, Iowa College Acquisition, LLC and Purdue University Global, Inc. (the "First Amendment"), with The Trustees of Purdue University as a party to the First Amendment solely for the purposes of continuing to be bound by the Purdue Provisions (as defined therein) (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019).+
10.6	Graham Holdings Company 2022 Incentive Compensation Plan, effective May 5, 2022, filed as Appendix A to the Company's Proxy Statement on Form DEF 14A for the fiscal year ended December 31, 2021, and incorporated herein by reference.*
10.7	Graham Holdings Company Supplemental Executive Retirement Plan as amended and restated effective December 10, 2013 (incorporated by reference to Exhibit 10.3 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013).*
10.8	Amendment No. 1 to Graham Holdings Company Supplemental Executive Retirement Plan, effective March 31, 2014 (incorporated by reference to Exhibit 10.4 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014).*
10.9	Graham Holdings Company Deferred Compensation Plan as amended and restated effective January 1, 2014 (incorporated by reference to Exhibit 10.4 to Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2013).*
10.10	Letter Agreement between the Company and Timothy J. O'Shaughnessy, dated October 20, 2014 (incorporated by reference to Exhibit 10.6 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2014).*
10.11	Letter Agreement between the Company and Andrew S. Rosen, dated April 7, 2014 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015).*
10.12	Letter Agreement between the Company and Jacob M. Maas, dated August 24, 2015 (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018).*
21	List of subsidiaries of the Company.
23	Consent of independent registered public accounting firm.
24	Power of Attorney dated February 20, 2023.
31.1	Rule 13a-14(a)/15d-14(a) Certification of the Chief Executive Officer.
31.2	Rule 13a-14(a)/15d-14(a) Certification of the Chief Financial Officer.
32	Section 1350 Certification of the Chief Executive Officer and the Chief Financial Officer.
101.INS	Inline XBRL Instance Document—the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document

Exhibit Number	Description
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover Page Interactive Data File, formatted in Inline XBRL and included as Exhibit 101

* A management contract or compensatory plan or arrangement required to be included as an exhibit hereto pursuant to Item 15(b) of Form 10-K.

** Graham Holdings Company hereby undertakes to furnish supplementally a copy of any omitted exhibit or schedule to such agreement to the SEC upon request.

+ Select portions of this exhibit have been omitted pursuant to a request for confidential treatment and have been filed separately with the SEC.

SIGNATURES

Pursuant to the requirements of Section 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, on February 24, 2023.

GRAHAM HOLDINGS COMPANY
(Registrant)

By /s/ Wallace R. Cooney

Wallace R. Cooney
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated on February 24, 2023:

Timothy J. O'Shaughnessy	President, Chief Executive Officer (Principal Executive Officer) and Director
Wallace R. Cooney	Chief Financial Officer (Principal Financial Officer)
Marcel A. Snyman	Principal Accounting Officer
Donald E. Graham	Chairman of the Board
Tony Allen	Director
Danielle Conley	Director
Christopher C. Davis	Director
Thomas S. Gayner	Director
Anne M. Mulcahy	Director
G. Richard Wagoner, Jr.	Director
Katharine Weymouth	Director

By /s/ Wallace R. Cooney

Wallace R. Cooney
Attorney-in-Fact

An original power of attorney authorizing Timothy J. O'Shaughnessy, Wallace R. Cooney and Nicole M. Maddrey, and each of them, to sign all reports required to be filed by the Registrant pursuant to the Securities Exchange Act of 1934 on behalf of the above-named directors and officers has been filed with the Securities and Exchange Commission.

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All schedules have been omitted either because they are not applicable or because the required information is included in the Consolidated Financial Statements or the notes thereto referred to above.

MANAGEMENT'S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS AND FINANCIAL CONDITION

This analysis should be read in conjunction with the Consolidated Financial Statements and the notes thereto. Refer to Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in the Graham Holdings Company's 2021 Annual Report on Form 10-K for management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2021 compared to the year ended December 31, 2020.

OVERVIEW

Graham Holdings Company (the Company) is a diversified holding company whose operations include educational services, television broadcasting, manufacturing, healthcare and automotive dealerships. The Company has seven reportable segments and a group of companies that make up Other Businesses. The Company's business units are diverse and subject to different trends and risks.

Education is the largest operating division of the Company, making up 36% of the Company's consolidated revenues in 2022. Through its subsidiary Kaplan, Inc., the Company provides extensive worldwide education services for individuals, schools and businesses. The Company has devoted significant resources and attention to this division for many years, given its geographic and product diversity, the investment opportunities and growth prospects during this time, and challenges related to government regulation. Kaplan is organized into the following three operating segments: Kaplan International, Kaplan Higher Education (KHE) and Supplemental Education.

Kaplan International reported revenue growth for 2022 due largely to increases at Languages and Pathways, partially offset by a decline at Singapore. Kaplan International operating results improved in 2022 due to a reduction in losses at Languages and improved results at Pathways and UK Professional. KHE revenue declined in 2022, due to lower costs incurred for reimbursement under the Purdue University Global (Purdue Global) agreement. KHE operating results were flat in 2022 as growth from Purdue Global fees was offset by increased investment costs. Supplemental Education revenues and operating results declined in 2022 due largely to a reduction in retail comprehensive test preparation demand; demand for professional programs remained stable.

The Company's second largest business is television broadcasting. The Company's television broadcasting division reported higher revenues and operating income in 2022, due largely to significant political advertising revenue from the 2022 election cycle. Retransmission revenues, net of network fee expense, trended down slightly in 2022 with this trend expected to continue in the future due largely to adverse subscriber trends from cord cutting. In recent years, the television broadcasting division has consistently generated significantly higher operating income amounts and operating income margins than the education division and the Company's other reporting segments.

The Company's manufacturing division has provided meaningful operating cash flow over the last few years, despite reduced demand due to the COVID-19 pandemic at certain businesses. Graham Healthcare Group (GHG) has grown substantially over the last few years and provided meaningful operating cash flow from acquisitions and internal growth. GHG has expanded from its home health and hospice operations into new lines of business, largely from significant growth at CSI Pharmacy Holding Company, which provides nursing care and prescription services for patients receiving in-home infusion treatments. Automotive revenues, operating income and operating cash flow grew substantially in 2022 due to three large dealership acquisitions, internal growth and a favorable operating environment.

The Company's other businesses include several investment stage businesses as well as investments into new lines of business over the last few years. In total, there are nine operating business units that make up this group in three categories: retail, media and specialty. The largest of these businesses from a revenue standpoint is Leaf,

a consumer internet company acquired in 2021, followed by Clyde's Restaurant Group and Framebridge, a custom framing service company. In 2022, Clyde's reported positive operating income, while the other businesses each reported operating losses, which were significant at Leaf and Framebridge.

The Company generates a significant amount of cash from its businesses that is used to support its operations, pay down debt and fund capital expenditures, share repurchases, dividends, acquisitions and other investments.

RESULTS OF OPERATIONS

Net income attributable to common shares was $67.1 million ($13.79 per share) for the year ended December 31, 2022, compared to $352.1 million ($70.45 per share) for the year ended December 31, 2021.

Items included in the Company's net income for 2022 are listed below:

- a $6.1 million net credit related to fair value changes in contingent consideration from prior acquisitions (after-tax impact of $6.1 million or $1.25 per share);
- $129.0 million in goodwill and intangible asset impairment charges (after-tax impact of $117.0 million, or $24.06 per share) at Leaf recorded in the fourth quarter;
- $3.6 million in expenses related to a non-operating Separation Incentive Program (SIP) at the education division (after-tax impact of $2.7 million, or $0.56 per share) recorded in the fourth quarter;
- $139.6 million in net losses on marketable equity securities (after-tax impact of $102.8 million, or $21.14 per share);
- $11.8 million in net losses of affiliates whose operations are not managed by the Company (after-tax impact of $8.7 million, or $1.79 per share);
- a fourth quarter gain of $18.4 million on the sale of CyberVista (after-tax impact of $13.5 million, or $2.78 per share);
- Non-operating gains, net, of $9.5 million from write-ups, sales and impairments of cost and equity method investments (after-tax impact of $7.1 million, or $1.45 per share); and
- $16.5 million in interest expense to adjust the fair value of the mandatorily redeemable noncontrolling interest (after-tax impact of $15.4 million, or $3.17 per share).

Items included in the Company's net income for 2021 are listed below:

- a $3.9 million net credit related to fair value changes in contingent consideration from prior acquisitions ($0.78 per share);
- $31.6 million in goodwill and other long-lived asset impairment charges (after-tax impact of $26.0 million, or $5.19 per share);
- $1.1 million in expenses related to a non-operating SIP at manufacturing (after-tax impact of $0.8 million, or $0.16 per share);
- $243.1 million in net gains on marketable equity securities (after-tax impact of $179.7 million, or $35.96 per share);
- $12.6 million in net earnings of affiliates whose operations are not managed by the Company (after-tax impact of $9.3 million, or $1.86 per share);
- Non-operating gains, net, of $13.6 million from write-ups, sales and impairments of cost and equity method investments (after-tax impact of $10.1 million, or $2.02 per share);
- $4.1 million in interest expense to adjust the fair value of the mandatorily redeemable noncontrolling interest (after-tax impact of $4.0 million, or $0.80 per share); and
- a $17.2 million deferred tax benefit arising from a change in the estimated deferred state income tax rate related to the Company's pension and other postretirement plans ($3.45 per share).

Revenue for 2022 was $3,924.5 million, up 23% from $3,186.0 million in 2021. Revenues increased at all the Company's divisions. Operating costs and expenses for the year increased to $3,840.6 million in 2022, from $3,108.6 million in 2021. Expenses in 2022 increased at education, healthcare, automotive and other businesses, partially offset by decreases at television broadcasting and manufacturing. The Company reported operating income for 2022 of $83.9 million, compared to $77.4 million in 2021. Operating results increased at education, television broadcasting, manufacturing and automotive, partially offset by declines at healthcare and other businesses.

The COVID-19 pandemic and measures taken to prevent its spread significantly impacted the Company's results for 2021 and, to a lesser extent, 2022, largely from reduced demand for the Company's products and services.

Division Results

Education

Education division revenue in 2022 totaled $1,427.9 million, up 5% from $1,361.2 million in 2021. Kaplan reported operating income of $82.9 million for 2022, an increase from $50.6 million in 2021.

The COVID-19 pandemic adversely impacted Kaplan's operating results during 2021 and, to a lesser extent, during 2022. Kaplan serves a large number of students who travel to other countries to study a second language, prepare for licensure, or pursue a higher education degree. Government-imposed travel restrictions and school closures arising from COVID-19 had a negative impact on the ability of certain international students to travel and attend Kaplan's programs, particularly Kaplan International's Language programs (Languages) in 2021.

A summary of Kaplan's operating results is as follows:

	Year Ended December 31		
(in thousands)	**2022**	2021	% Change
Revenue			
Kaplan international	**$ 816,239**	$ 726,875	12
Higher education	**304,136**	317,854	(4)
Supplemental education	**301,625**	309,069	(2)
Kaplan corporate and other	**18,752**	14,759	27
Intersegment elimination	**(12,837)**	(7,312)	–
	$1,427,915	$1,361,245	5
Operating Income (Loss)			
Kaplan international	**$ 72,066**	$ 33,457	–
Higher education	**24,031**	24,134	0
Supplemental education	**21,069**	36,919	(43)
Kaplan corporate and other	**(18,018)**	(24,715)	27
Amortization of intangible assets	**(16,170)**	(16,001)	(1)
Impairment of long-lived assets	**–**	(3,318)	–
Intersegment elimination	**(45)**	97	–
	$ 82,933	$ 50,573	64

Kaplan International includes postsecondary education, professional training and language training businesses largely outside the United States. Kaplan International revenue increased 12% in 2022 (22% on a constant currency basis). The increase is due largely to growth at Languages and Pathways, partially offset by a decline at

Singapore. Kaplan International reported operating income of $72.1 million in 2022, compared to $33.5 million in 2021. The improved results are due largely to a reduction in losses at Languages, and improved results at Pathways and UK Professional, partially offset by a decline at Singapore. Overall, Kaplan International's operating results in 2021 were negatively impacted by $43 million in losses incurred at Languages from significant COVID-19 disruptions.

Higher Education includes the results of Kaplan as a service provider to higher education institutions. Higher Education revenue declined 4% in 2022 due largely to lower costs incurred for reimbursement under the Purdue Global agreement. In 2022 and 2021, Kaplan recorded a portion of the fee with Purdue Global based on an assessment of its collectability under the TOSA. Enrollments at Purdue Global for 2022 finished 1% lower compared with the end of 2021. The Company will continue to assess the collectability of the fee with Purdue Global on a quarterly basis to make a determination as to whether to record all or part of the fee in the future and whether to make adjustments to fee amounts recognized in earlier periods. During 2022 and 2021, Kaplan recorded $38.9 million and $34.8 million, respectively, in fees from Purdue Global in its Higher Education operating results. Higher Education results were flat in 2022 due to an increase in the Purdue Global fee recorded, partially offset by increased investment costs incurred related to other university agreements and other higher education development costs.

Supplemental Education includes Kaplan's standardized test preparation programs and domestic professional and other continuing education businesses. In November 2021, Supplemental Education acquired two small businesses. Supplemental Education revenue declined 2% in 2022 due largely to declines in retail comprehensive test preparation demand, offset in part by revenue from acquisitions completed in November 2021. Overall, demand for graduate and pre-college test preparation programs has declined due to the strength of U.S. employment markets and the decline in test takers, while demand for professional programs remained stable. Operating results declined in 2022 due to lower revenues and increased advertising and product development costs.

In the fourth quarter of 2022, Kaplan implemented a SIP to reduce the number of employees at Supplemental Education and Higher Education, which was funded by the assets of the Company's pension plan. In connection with the SIP, the Company recorded $3.6 million in non-operating pension expense in the fourth quarter of 2022. Kaplan estimates the SIP will result in annual expense reductions of approximately $10 million.

Kaplan corporate and other represents unallocated expenses of Kaplan, Inc.'s corporate office, other minor businesses and certain shared activities. Overall, Kaplan corporate and other expenses declined in 2022 due to lower incentive compensation costs compared to 2021.

Television Broadcasting

A summary of television broadcasting's operating results is as follows:

	Year Ended December 31		
(in thousands)	**2022**	2021	% Change
Revenue	**$535,651**	$494,177	8
Operating Income	**201,879**	149,422	35

Graham Media Group, Inc. owns seven television stations located in Houston, TX; Detroit, MI; Orlando, FL; San Antonio, TX; Jacksonville, FL; and Roanoke, VA, as well as SocialNewsDesk, a provider of social media management tools designed to connect newsrooms with their users. Revenue at the television broadcasting division increased 8% to $535.7 million in 2022, from $494.2 million in 2021. The revenue increase is due to a $57.7 million increase in political revenue, increases from winter Olympics and Super Bowl advertising revenue at the Company's NBC affiliates in the first quarter of 2022, and a $0.4 million increase in retransmission revenues, partially offset by declines in other categories from fewer available advertising spots and a reduction in

digital revenues. Operating income for 2022 increased 35% to $201.9 million, from $149.4 million in 2021, due to increased revenues and a reduction in incentive compensation costs. While per subscriber rates from cable, satellite and OTT providers have grown, overall subscribers are down due to cord cutting across all platforms, resulting in retransmission revenue net of network fees in 2022 to be down slightly compared with 2021, and this trend is expected to continue in the future. Operating margin at the television broadcasting division was 38% in 2022 and 30% in 2021.

In May 2022, the Company's television station in Orlando (WKMG) entered into a new network affiliation agreement with CBS effective July 1, 2022 through June 30, 2026. In December 2022, the Company's television stations in Houston (KPRC), Detroit (WDIV) and Roanoke (WSLS) entered into a new three-year NBC Affiliation Agreement effective January 1, 2023 through December 31, 2025.

Graham Media Group's media hubs remain competitive and ideally positioned in their respective markets. Regarding linear, KSAT in San Antonio and WJXT in Jacksonville ended the year with market-leading 6 a.m., 6 p.m. and late newscasts among the all-important 25 to 54 audience segment. KPRC in Houston had success at 6 p.m. and 10 p.m. with a dominant performance and finished a very close second in the mornings. WDIV in Detroit had a solid win at 6 p.m. and remained competitive at 6 a.m. and 11 p.m., while WKMG in Orlando wrapped up the year with a respectable late news performance finishing #2. WSLS ranked third in key newscasts, while syndication remained a strength for WCWJ in daytime and early fringe. On the digital front, GMG delivered year over year growth in overall digital users, a significant increase in live stream minutes watched, steady subscriber growth in their Insider membership program and finished another year with leading local media sites in each of their respective markets.

Manufacturing

A summary of manufacturing's operating results is as follows:

	Year Ended December 31		
(in thousands)	2022	2021	% Change
Revenue	**$486,643**	$458,125	6
Operating Income (Loss)	**33,707**	(16,048)	–

Manufacturing includes four businesses: Hoover, a supplier of pressure impregnated kiln-dried lumber and plywood products for fire retardant and preservative applications; Dekko, a manufacturer of electrical workspace solutions, architectural lighting and electrical components and assemblies; Joyce/Dayton, a manufacturer of screw jacks and other linear motion systems; and Forney, a global supplier of products and systems that control and monitor combustion processes in electric utility and industrial applications.

Manufacturing revenues increased 6% in 2022 due to increased revenues at all of the manufacturing businesses. The revenue growth in 2022 at Hoover is due to higher wood prices and increased product demand. Wood prices were highly volatile in 2022 and 2021. Overall, Hoover results include gains on inventory sales in 2022 and 2021; however, wood gains on inventory sales were modestly higher in 2021. Manufacturing operating results increased significantly in 2022 due to $28.0 million in goodwill and other long-lived asset impairment charges in 2021 ($26.7 million of this charge was recorded at Dekko in the third quarter of 2021), and improved results at all of the manufacturing businesses.

In the second quarter of 2021, Dekko announced a plan to relocate its manufacturing operations in Shelton, CT to other Dekko manufacturing facilities, which was substantially completed by the end of 2021. In connection with this activity, Dekko implemented a SIP for the affected employees, resulting in $1.1 million in non-operating SIP expense recorded in the second quarter of 2021, which was funded by the assets of the Company's pension plan.

Healthcare

A summary of healthcare's operating results is as follows:

(in thousands)	Year Ended December 31		
	2022	2021	% Change
Revenue	**$326,000**	$223,030	46
Operating Income	**15,265**	26,806	(43)

The Graham Healthcare Group (GHG) provides home health and hospice services in seven states. GHG also provides other healthcare services, including nursing care and prescription services for patients receiving in-home infusion treatments through its 76.5% interest in CSI Pharmacy Holding Company, LLC (CSI). In December 2021, GHG acquired two small businesses, one of which expanded GHG's home health operations into Florida. In May 2022, GHG acquired two small businesses, one of which expanded GHG's home health operations into Kansas and Missouri. In July 2022, GHG acquired a 100% interest in a multi-state provider of Applied Behavior Analysis clinics and in August 2022, GHG acquired two small businesses, which expanded GHG's hospice services into Missouri and Ohio. Healthcare revenues increased 46% in 2022 largely due to significant growth at CSI and from businesses acquired in the fourth quarter of 2021 and in 2022, along with growth in home health and hospice services.

In 2022, GHG implemented a new pension credit retention program in order to improve employee retention and utilize the Company's surplus pension assets. The GHG pilot program offers a pension credit up to $50,000 per employee, cliff vested after three years of continuous employment for certain existing employees and new employees hired from January 1, 2022 through December 31, 2024. GHG recorded pension expense of $10.5 million related to this program in 2022.

The decline in GHG operating results in 2022 is due to $10.5 million in 2022 pension expense related to the new GHG pension credit retention program, net losses from newly acquired businesses, and increased marketing, human resources, recruiting and business development costs and overall increased compensation and transportation costs in nursing and clinical staffing. Excluding pension expense and net losses from newly acquired businesses, 2022 operating results increased due to revenue growth and improved results at CSI and in home health.

The Company also holds interests in four home health and hospice joint ventures managed by GHG, whose results are included in equity in earnings of affiliates in the Company's Consolidated Statements of Operations. In 2022 and 2021, the Company recorded equity in earnings of $8.1 million and $10.2 million, respectively, from these joint ventures. During the first quarter of 2022, GHG, through its Residential Home Health Illinois and Residential Hospice Illinois affiliates, acquired an interest in the home health and hospice assets of NorthShore University HealthSystem, an integrated healthcare delivery system serving patients throughout the Chicago, IL area. The transaction resulted in a decrease to GHG's interest in Residential Hospice Illinois and a $0.6 million non-operating gain was recorded in the first quarter of 2022 related to the change in interest.

Automotive

A summary of automotive's operating results is as follows:

(in thousands)	Year Ended December 31		
	2022	2021	% Change
Revenue	**$734,185**	$327,069	–
Operating Income	**34,633**	11,771	–

Automotive includes six automotive dealerships in the Washington, D.C. metropolitan area: Ourisman Lexus of Rockville, Ourisman Honda of Tysons Corner, Ourisman Jeep Bethesda, Ourisman Ford of Manassas, which was

acquired on December 28, 2021, from the Battlefield Automotive Group, and Ourisman Toyota of Woodbridge and Ourisman Chrysler-Dodge-Jeep-Ram (CDJR) of Woodbridge, which were acquired on July 5, 2022 from the Lustine Automotive Group. Christopher J. Ourisman, a member of the Ourisman Automotive Group family of dealerships, and his team of industry professionals operates and manages the dealerships; the Company holds a 90% stake.

Revenues for 2022 increased significantly due to the acquisitions of the Ford, Toyota and CDJR dealerships; sales growth at the Jeep dealership due to an increase in new vehicle inventory provided by the manufacturer and a growing market presence; and higher average new and used car selling prices at the Lexus, Honda and Jeep dealerships as a result of strong customer demand and new vehicle inventory shortages related to supply chain disruptions and production delays at vehicle manufacturers. Revenue increases in 2022 were partially offset by lower revenues at the Honda and Lexus dealerships due to volume declines as a result of inventory shortages. Operating results for 2022 improved significantly due largely to the Ford, Toyota and CDJR acquisitions, increased sales at the Jeep dealership and increased margins at the Lexus dealership.

Other Businesses

A summary of revenue by category for other businesses:

(in thousands)	Year Ended December 31		% Change
	2022	2021	
Operating Revenues			
Retail [(1)]	**$163,570**	$130,720	25
Media [(2)]	**126,095**	110,805	14
Specialty [(3)]	**126,419**	82,828	53
	$416,084	$324,353	28

(1) Includes Leaf Marketplace and Framebridge
(2) Includes Leaf Media, Code3, Slate, Foreign Policy, Pinna and City Cast
(3) Includes Clyde's Restaurant Group, Decile and CyberVista

Overall, revenue from other businesses increased across all categories in 2022. Retail revenue increased primarily due to the Leaf acquisition, as well as revenue growth at Framebridge; Media revenue increased primarily due to the Leaf acquisition, as well as revenue growth at Foreign Policy, partially offset by declines at Code3; and Specialty revenue increased due to significant revenue growth at Clyde's Restaurant Group (CRG).

Overall, operating results at other businesses declined in 2022 due to $129.0 million in goodwill and intangible asset impairment charges at Leaf and increased losses at Leaf, Framebridge, Code3 and City Cast, partially offset by improved results at CRG, Decile, Pinna and Slate.

Leaf Group

On June 14, 2021, the Company acquired Leaf Group Ltd. (Leaf), a consumer internet company, headquartered in Santa Monica, CA, that builds enduring, creator-driven brands that reach passionate audiences in large and growing lifestyle categories, including fitness and wellness (Well+Good, Livestrong.com and MyPlate App), and home, art and design (Saatchi Art, Society6 and Hunker). Leaf has three major operating divisions: Society6 Group and Saatchi Art Group (Marketplace businesses) and the Media Group.

For the second half of 2022, revenue for Society6 Group and the Media Group declined substantially compared to the second half of 2021, with fourth quarter 2022 revenue declines at an accelerated level. Revenues also declined at Saatchi Art Group for the second half of 2022. Revenue decreases at Society6 Group are due to declines in traffic, conversion rates and related sales for both direct to consumer and business to business categories; revenue declines at the Media Group are due to reduced traffic and the soft digital advertising market for both direct and programmatic categories. Overall, Leaf reported significant operating losses for 2022.

As a result of the substantial revenue declines and significant operating losses at Leaf in the fourth quarter of 2022, the Company's current outlook for digital advertising revenue and consumer demand for art and related goods at Leaf has weakened. Consequently, the Company recorded $129.0 million in goodwill and intangible asset impairment charges.

Clyde's Restaurant Group

CRG owns and operates 11 restaurants and entertainment venues in the Washington, D.C. metropolitan area, including Old Ebbitt Grill and The Hamilton. As a result of the COVID-19 pandemic, CRG temporarily closed its restaurant dining rooms in Maryland and the District of Columbia in December 2020, reopening again for limited indoor dining service in February 2021. Various government-ordered dining restrictions continued until the middle of 2021. CRG reported an operating profit for 2022 compared with operating losses in 2021. Both revenues and operating results improved significantly in 2022 due to strong guest traffic, the absence of government-ordered dining restrictions and a favorable rent concession recorded in the second quarter of 2022.

Framebridge

Framebridge is a custom framing service company, headquartered in Washington, D.C., with 17 retail locations in the Washington, D.C., New York City, Atlanta, GA, Philadelphia, PA, Boston, MA and Chicago, IL areas and two manufacturing facilities in Kentucky and New Jersey. Framebridge has opened two additional stores in early 2023 and is exploring opportunities for further store expansion for the remainder of the year. Framebridge revenues in 2022 increased from the prior year due to operating additional retail stores compared to 2021. In the fourth quarter of 2022, Framebridge successfully managed their production operations for timely completion of holiday orders without a significant backlog. Framebridge is an investment stage business and reported significant operating losses in 2022 and 2021.

Other

Other businesses also include Code3, a performance marketing agency focused on driving performance for brands through three core elements of digital success: media, creative and commerce; Slate and Foreign Policy, which publish online and print magazines and websites; and three investment stage businesses, Decile, Pinna and City Cast. Slate, Foreign Policy, Pinna and City Cast reported revenue increases in 2022. Losses from each of these six businesses in 2022 adversely affected operating results. Other businesses also include CyberVista, which was sold in October 2022 when the Company announced a strategic merger of CyberVista and CyberWire, a B2B cybersecurity audio network to form a new parent company, N2K Networks. The focus of N2K Networks is to expand its technology platform to enable development of more resilient enterprise cyber workforces, to pioneer new markets, and to create original "news to knowledge" audio brands. In connection with the merger, the Company recorded an $18.4 million non-cash, non-operating gain, and participated in a Series A funding round. The Company's investment in N2K Networks is reported as an equity method investment.

Corporate Office

Corporate office includes the expenses of the Company's corporate office and certain continuing obligations related to prior business dispositions. Corporate office expenses decreased in 2022 due primarily to a higher net credit recorded in 2022 related to fair value changes in contingent consideration related to the Framebridge acquisition.

Equity in (Losses) Earnings of Affiliates

At December 31, 2022, the Company held an approximate 12% interest in Intersection Holdings, LLC (Intersection), a company that provides digital marketing and advertising services and products for cities, transit systems, airports, and other public and private spaces. The Company also holds interests in several other

affiliates, including a number of home health and hospice joint ventures managed by GHG and two joint ventures managed by Kaplan. The Company recorded equity in losses of affiliates of $2.8 million for 2022, compared to earnings of $17.9 million for 2021. These amounts include $11.8 million in net losses for 2022 and $12.6 million in net earnings for 2021 from affiliates whose operations are not managed by the Company; this includes losses from the Company's investment in Intersection of $8.1 million in 2022 and $30.5 million in 2021. The Company also recorded $6.4 million in write-downs in equity in earnings of affiliates related to one of its investments in the third quarter of 2021.

Net Interest Expense and Related Balances

In connection with the acquisition of the Toyota and CDJR dealerships, in July 2022, the automotive subsidiary of the Company amended its commercial note due January 1, 2032, to increase the aggregate loan amount to $71.6 million. The Company also borrowed $27.2 million, comprised of three commercial notes, to purchase the real estate associated with these dealerships; the Company entered into an interest rate swap to fix the interest rate on this debt at 4.861% per annum.

The Company incurred net interest expense of $51.2 million in 2022, compared to $30.5 million in 2021. The Company recorded net interest expense of $16.5 million and $4.1 million in 2022 and 2021, respectively, to adjust the fair value of the mandatorily redeemable noncontrolling interest at GHG.

At December 31, 2022, the Company had $726.4 million in borrowings outstanding at an average interest rate of 5.7%, and cash, marketable securities and other investments of $812.8 million. At December 31, 2022, the Company had $200.2 million outstanding on its $300 million revolving credit facility. At December 31, 2021, the Company had $667.5 million in borrowings outstanding at an average interest rate of 4.3%, and cash, marketable securities and other investments of $983.3 million.

Non-Operating Pension and Postretirement Benefit Income, Net

The Company recorded net non-operating pension and postretirement benefit income of $197.9 million in 2022, compared to $109.2 million in 2021.

In the fourth quarter of 2022, the Company recorded $3.6 million in expenses related to a non-operating SIP at the education division. In the second quarter of 2021, the Company recorded $1.1 million in expenses related to a non-operating SIP at manufacturing.

(Loss) Gain on Marketable Equity Securities, Net

The Company recognized $139.6 million in net losses on marketable equity securities in 2022 compared to $243.1 million in net gains in 2021.

Other Non-Operating Income

The Company recorded total other non-operating income, net, of $33.5 million in 2022, compared to $32.6 million in 2021. The 2022 amounts included a non-cash gain of $18.4 million on the sale of CyberVista; $4.3 million in gains related to sales of businesses and contingent consideration; a $6.9 million increase in the fair value of cost method investments; $3.3 million in gains on sales of cost method investments; a $0.6 million gain on sale of an equity affiliate, and other items; partially offset by $2.0 million in foreign currency losses and $1.3 million in impairment on a cost method investment. The 2021 amounts included $11.8 million in fair value increases on cost method investments; $9.4 million in gains on sales of cost method investments; $3.8 million in gains related to sales of businesses and contingent consideration and other items.

Provision for Income Taxes

The Company's effective tax rate for 2022 was 42.1%. The Company's effective tax rate in 2022 was unfavorably impacted by permanent differences related to the goodwill and intangible asset impairment charges and the interest expense recorded to adjust the fair value of the mandatorily redeemable noncontrolling interest at GHG. Excluding the impact of these items, the overall income tax rate for 2022 was 24.1%.

The Company's effective tax rate for 2021 was 21.4%. The Company's effective tax rate in 2021 was favorably impacted by a $17.2 million deferred tax adjustment arising from a change in the estimated deferred state income tax rate attributable to the apportionment formula used in the calculation of deferred taxes related to the Company's pension and other postretirement plans. In addition, the Company's effective tax rate was unfavorably impacted by permanent differences related to the goodwill and other long-lived asset impairment charges and the interest expense recorded to adjust the fair value of the mandatorily redeemable noncontrolling interest at GHG. Excluding the impact of these items, the overall income tax rate for 2021 was 24.6%.

FINANCIAL CONDITION: LIQUIDITY AND CAPITAL RESOURCES

The Company considers the following when assessing its liquidity and capital resources:

	As of December 31	
(In thousands)	**2022**	2021
Cash and cash equivalents	**$169,319**	$145,886
Restricted cash	**21,113**	12,957
Investments in marketable equity securities and other investments	**622,408**	824,445
Total debt	**726,360**	667,501

Cash generated by operations is the Company's primary source of liquidity. The Company maintains investments in a portfolio of marketable equity securities, which is considered when assessing the Company's sources of liquidity. An additional source of liquidity includes the undrawn portion of the Company's $300 million five-year revolving credit facility, amounting to $99.8 million at December 31, 2022.

In March 2020, the U.S. government enacted legislation, including the CARES Act to provide stimulus in the form of financial aid to businesses affected by the COVID-19 pandemic. Under the CARES Act, employers could defer the payment of the employer share of FICA taxes due for the period beginning on March 27, 2020, and ending December 31, 2020. The Company deferred $21.5 million of FICA payments under this program, with $10.7 million of the deferred payments still payable at December 31, 2021. The remaining deferred balance was paid in 2022.

The CARES Act also included provisions to support healthcare providers in the form of grants and changes to Medicare and Medicaid payments. In April 2020, GHG applied for and received $31.5 million under the expanded Medicare Accelerated and Advanced Payment Program, modified by the CARES Act. The Department of Health and Human Services (HHS) started to recoup this advance in April 2021 by withholding a portion of the amount reimbursed for claims submitted for services provided after the beginning of the recoupment period. During 2021, an amount of $18.9 million was withheld by HHS with the remaining $12.6 million withheld in 2022. The advance has been recouped in full as of December 31, 2022.

Governments in other jurisdictions where the Company operates also provided relief to businesses affected by the COVID-19 pandemic in the form of job retention schemes, payroll assistance, deferral of income and other tax payments, and loans. For the year ended December 31, 2021, Kaplan recorded benefits totaling $4.7 million related to job retention and payroll schemes, mostly at Kaplan International.

During 2022, the Company's cash and cash equivalents increased by $23.4 million, due to cash generated from operations, the net proceeds from the sale of marketable equity securities and net borrowings, which was partially

offset by acquisitions, additional investments in marketable equity securities and equity securities, capital expenditures, dividend payments and share repurchases. In 2022, the Company's borrowings increased by $58.9 million, primarily due to additional borrowings at the automotive subsidiary, partially offset by repayments under the revolving credit facility.

As of December 31, 2022, the Company had money market investments of $7.7 million, which are included in cash and cash equivalents. The Company had no money market investments as of December 31, 2021. At December 31, 2022, the Company held approximately $132 million in cash and cash equivalents in businesses domiciled outside the U.S., of which approximately $8 million is not available for immediate use in operations or for distribution. Additionally, Kaplan's business operations outside the U.S. retain cash balances to support ongoing working capital requirements, capital expenditures, and regulatory requirements. As a result, the Company considers a significant portion of the cash and cash equivalents balance held outside the U.S. as not readily available for use in U.S. operations.

At December 31, 2022, the fair value of the Company's investments in marketable equity securities was $609.9 million, which includes investments in the common stock of five publicly traded companies. The Company purchased $42.1 million of marketable equity securities during 2022, of which $1.5 million was settled in January 2023. During 2022, the Company sold marketable equity securities that generated proceeds of $102.0 million. At December 31, 2022, the net unrealized gain related to the Company's investments totaled $339.2 million.

The Company had working capital of $534.1 million and $680.8 million at December 31, 2022 and 2021, respectively. The Company maintains working capital levels consistent with its underlying business requirements and consistently generates cash from operations in excess of required interest or principal payments.

At December 31, 2022 and 2021, the Company had borrowings outstanding of $726.4 million and $667.5 million, respectively. The Company's borrowings at December 31, 2022 were mostly from $400.0 million of 5.75% unsecured notes due June 1, 2026, $200.2 million in outstanding borrowings under the Company's revolving credit facility and commercial notes of $116.6 million at the automotive subsidiary. The Company's borrowings at December 31, 2021 were mostly from $400.0 million of 5.75% unsecured notes due June 1, 2026, $209.6 million in outstanding borrowings under the Company's revolving credit facility and commercial notes of $47.0 million at the automotive subsidiary. The interest on the $400.0 million of 5.75% unsecured notes is payable semi-annually on June 1 and December 1.

On May 3, 2022, the Company amended the revolving credit facility agreement to, among other things, extend the maturity date to May 30, 2027.

During 2022 and 2021, the Company had average borrowings outstanding of approximately $689.9 million and $545.2 million, respectively, at average annual interest rates of approximately 4.8%. The Company incurred net interest expense of $51.2 million and $30.5 million, respectively, during 2022 and 2021. Included in the 2022 and 2021 interest expense is $16.5 million and $4.1 million, respectively, to adjust the fair value of the mandatorily redeemable noncontrolling interest (see Note 11).

On August 30, 2022, Moody's affirmed the Company's credit rating and maintained the outlook as Stable. On April 12, 2022, Standard & Poor's affirmed the Company's credit rating and maintained the outlook as Stable.

The Company's current credit ratings are as follows:

	Moody's	**Standard & Poor's**
Long-term	Ba1	BB
Outlook	Stable	Stable

The Company expects to fund its estimated capital needs primarily through existing cash balances and internally generated funds, and, as needed, from borrowings under its revolving credit facility. As of December 31, 2022, the Company had $200.2 million outstanding under the $300 million revolving credit facility. In management's opinion, the Company will have sufficient financial resources to meet its business requirements in the next 12 months, including working capital requirements, capital expenditures, interest payments, potential acquisitions and strategic investments, dividends and stock repurchases.

In summary, the Company's cash flows for each period were as follows:

	Year Ended December 31		
(In thousands)	**2022**	2021	2020
Net cash provided by operating activities	**$ 235,604**	$ 202,426	$ 210,663
Net cash (used in) provided by investing activities	**(184,066)**	(494,635)	199,371
Net cash (used in) provided by financing activities	**(18,107)**	31,027	(204,002)
Effect of currency exchange rate change	**(1,842)**	(3,029)	2,978
Net increase (decrease) in cash and cash equivalents and restricted cash	**$ 31,589**	$(264,211)	$ 209,010

Operating Activities. Cash provided by operating activities is net income adjusted for certain non-cash items and changes in assets and liabilities. The Company's net cash flow provided by operating activities were as follows:

	Year Ended December 31		
(In thousands)	**2022**	2021	2020
Net Income	**$ 70,434**	$ 353,327	$ 299,968
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, amortization and goodwill and other long-lived asset impairment	**261,138**	162,225	161,207
Amortization of lease right-of-use asset	**67,568**	73,752	89,956
Net pension benefit and special separation benefit expense	**(166,611)**	(91,898)	(41,573)
Other non-cash activities	**130,230**	(183,742)	(229,134)
Change in operating assets and liabilities	**(127,155)**	(111,238)	(69,761)
Net Cash Provided by Operating Activities	**$ 235,604**	$ 202,426	$ 210,663

Net cash provided by operating activities consists primarily of cash receipts from customers, less disbursements for costs, benefits, income taxes, interest and other expenses.

For 2022 compared to 2021, the increase in net cash provided by operating activities is primarily due to higher net income, net of non-cash adjustments, partially offset by changes in operating assets and liabilities. Changes in operating assets and liabilities were driven by higher purchase of inventories and decreases in accounts payable and accrued liabilities, partially offset by an increase in the collection of accounts receivable.

For 2021 compared to 2020, the decrease in net cash provided by operating activities is primarily due to changes in operating assets and liabilities, partially offset by higher net income, net of non-cash adjustments. Changes in operating assets and liabilities were driven by a decrease in the collection of accounts receivable and partial repayment of advances related to the CARES Act, partially offset by other increases in accounts payable and accrued liabilities and deferred revenue.

Investing Activities. The Company's net cash flow (used in) provided by investing activities were as follows:

(In thousands)	Year Ended December 31		
	2022	2021	2020
Investments in certain businesses, net of cash acquired	**$(130,106)**	$(351,882)	$ (20,080)
Purchases of property, plant and equipment	**(82,684)**	(162,537)	(69,591)
Net proceeds from sales of marketable equity securities	**61,522**	17,463	73,771
Investments in equity affiliates, cost method and other investments	**(38,894)**	(8,531)	(12,367)
Net proceeds from sales of businesses, property, plant and equipment and other assets	**5,057**	10,295	225,570
Other	**1,039**	557	2,068
Net Cash (Used in) Provided by Investing Activities	**$(184,066)**	$(494,635)	$199,371

Acquisitions. During 2022, the Company acquired seven businesses: five in healthcare and two in automotive, for $143.2 million in cash and contingent consideration and the assumption of floor plan payables. GHG acquired two small businesses in August 2022, a 100% interest in a multi-state provider of Applied Behavioral Analysis clinics in July 2022, and two small businesses in May 2022. In July 2022, the Company's automotive subsidiary acquired two automotive dealerships, including the real property for the dealership operations. In addition to a cash payment and the assumption of $10.9 million in floor plan payables, the automotive subsidiary borrowed $77.4 million to finance the acquisition. During 2021, the Company acquired six businesses: two small businesses in its education division, two small businesses in healthcare, one new auto dealership in automotive, and all the outstanding shares of Leaf for cash and the assumption of $9.2 million in liabilities related to their pre-acquisition stock compensation plan, which will be paid in the future. Leaf is included in other businesses. During 2020, the Company acquired three businesses: two small businesses in its education division and an additional interest in Framebridge, Inc., which is included in other businesses. The Framebridge purchase price included $54.3 million in deferred payments and contingent consideration based on the acquiree achieving certain revenue milestones in the future.

Capital Expenditures. The 2022 and 2020 capital expenditures are lower than 2021 due to significant land and building purchases at Kaplan International's sixth-form college in London, U.K. and at the automotive subsidiary in 2021. The 2020 capital expenditures include spending in connection with spectrum repacking at the Company's television stations in Detroit, MI, Jacksonville, FL, and Roanoke, VA, as mandated by the FCC; these spectrum repacking expenditures were largely reimbursed to the Company by the FCC. The amounts reflected in the Company's Statements of Cash Flows are based on cash payments made during the relevant periods, whereas the Company's capital expenditures for 2022, 2021 and 2020 disclosed in Note 19 to the Consolidated Financial Statements include assets acquired during the year. The Company estimates that its capital expenditures will be in the range of $85 million to $95 million in 2023.

Net Proceeds from Sales of Investments and Businesses. During 2022, 2021 and 2020, the Company sold marketable securities that generated proceeds of $102.0 million, $65.5 million and $93.8 million, respectively. The Company purchased $42.1 million, of which $1.5 million was settled in January 2023, $48.0 million and $20.0 million of marketable equity securities during 2022, 2021 and 2020, respectively. In December 2020, the Company completed the sale of Megaphone; the total net proceeds from the sale were $223.0 million.

Investment in Equity Affiliates. During 2022, GHG invested an additional $18.5 million in two affiliates to fund their acquisition of an interest in a health system in Illinois and the Company also made an additional investment of $5.0 million in N2K Networks, the new parent entity formed through the CyberVista transaction.

Financing Activities. The Company's net cash flow (used in) provided by financing activities were as follows:

(In thousands)	Year Ended December 31		
	2022	2021	2020
Issuance (repayments) of borrowings	**$ 62,815**	$ 20,539	$ (81,276)
Net borrowing under revolving credit facilities	**3,000**	134,696	76,241
Net proceeds from (repayments of) vehicle floor plan payable	**26,230**	(10,563)	(14,160)
Common shares repurchased	**(71,386)**	(55,683)	(161,829)
Dividends paid	**(30,712)**	(30,136)	(29,970)
Other	**(8,054)**	(27,826)	6,992
Net Cash (Used in) Provided by Financing Activities	**$(18,107)**	$ 31,027	$(204,002)

Borrowings and Vehicle Floor Plan Payable. In July 2022, the Company's automotive subsidiary amended its commercial note to, among other things, increase the aggregate loan amount to $71.6 million and entered into three commercial notes in an aggregate amount of $27.2 million. The additional borrowings were used to acquire two automotive dealerships, including the real property for the dealership operations. In 2021, the Company borrowed against the $300 million revolving credit facility, which borrowing was used to purchase land and buildings at Kaplan International's sixth-form college in London, U.K. and at the automotive subsidiary and, to a lesser extent, to repurchase stock and fund various acquisitions during the fourth quarter of 2021. In addition, the automotive subsidiary borrowed $47.3 million, which was used to repay the outstanding balance of the term loan due on January 31, 2029 and fund the acquisition of an automotive dealership in the fourth quarter. In 2020, the Company borrowed £60 million against the $300 million revolving credit facility and used the proceeds to repay the £60 million outstanding balance under the Kaplan Credit Agreement that matured at the end of June 2020. In 2022, 2021, and 2020, the Company used vehicle floor plan financing to fund the purchase of new, used and service loaner vehicles at its automotive subsidiary. The proceeds from (repayments of) the vehicle floor plan payable fluctuates with changes in the amount of vehicle inventory held by the automotive dealerships.

Common Stock Repurchases. During 2022, 2021, and 2020, the Company purchased a total of 121,761, 93,969, and 406,112 shares, respectively, of its Class B common stock at a cost of approximately $71.4 million, $55.7 million, and $161.8 million, respectively. On September 10, 2020, the Board of Directors authorized the Company to acquire up to 500,000 shares of its Class B common stock. The Company did not announce a ceiling price or time limit for the purchases. At December 31, 2022, the Company had remaining authorization from the Board of Directors to purchase up to 148,421 shares of Class B common stock.

Dividends. The annual dividend rate per share was $6.32, $6.04 and $5.80 in 2022, 2021 and 2020, respectively. The Company expects to pay a dividend of $6.60 per share in 2023.

Other. In 2022, the Company paid $5.7 million related to contingent consideration and deferred payments from prior acquisitions. In 2021, the Company paid $30.9 million related to contingent consideration and deferred payments from prior acquisitions, mostly for the 2020 acquisition of Framebridge. In March 2021, Hoover's minority shareholders put their remaining outstanding shares to the Company, which had a redemption value of $3.5 million. In 2020, the Company received $25.1 million in proceeds from the exercise of stock options.

Contractual Obligations. The following reflects a summary of the Company's contractual obligations as of December 31, 2022:

(in thousands)	2023	2024	2025	2026	2027	Thereafter	Total
Debt and interest	$ 56,437	$ 59,128	$ 47,870	$435,332	$218,265	$ 77,195	$ 894,227
Finance leases	9,034	3,590	1,990	–	–	–	14,614
Operating leases	108,222	77,138	60,960	53,709	48,522	286,561	635,112
Programming purchase commitments (1)	7,923	5,907	3,404	35	–	–	17,269
Other purchase obligations (2)	126,944	90,374	76,557	37,287	9,471	39,392	380,025
Long-term liabilities (3)	2,643	2,562	2,472	2,431	2,412	8,227	20,747
Total	$311,203	$238,699	$193,253	$528,794	$278,670	$411,375	$1,961,994

(1) Includes commitments for the Company's television broadcasting business that are reflected in the Company's Consolidated Financial Statements and commitments to purchase programming to be produced in future years.

(2) Includes purchase obligations related to employment agreements, capital projects and other legally binding commitments. Other purchase orders made in the ordinary course of business are excluded from the table above. Any amounts for which the Company is liable under purchase orders are reflected in the Company's Consolidated Balance Sheets as accounts payable and accrued liabilities.

(3) Primarily made up of multiemployer pension plan withdrawal obligations and postretirement benefit obligations other than pensions. The Company has other long-term liabilities excluded from the table above, including obligations for deferred compensation, long-term incentive plans and long-term deferred revenue.

Other. The Company does not have any off-balance-sheet arrangements or financing activities with special-purpose entities (SPEs).

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and judgments that affect the amounts reported in the financial statements. On an ongoing basis, the Company evaluates its estimates and assumptions. The Company bases its estimates on historical experience and other assumptions believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could differ from these estimates.

An accounting policy is considered to be critical if it is important to the Company's financial condition and results and if it requires management's most difficult, subjective and complex judgments in its application. For a summary of all of the Company's significant accounting policies, see Note 2 to the Company's Consolidated Financial Statements.

Revenue Recognition, Trade Accounts Receivable and Allowance for Credit Losses. Education revenue is primarily derived from postsecondary education services, professional education and test preparation services. Revenue, net of any refunds, corporate discounts, scholarships and employee tuition discounts is recognized ratably over the instruction period or access period for higher education and supplemental education services.

At Kaplan International and Kaplan Supplemental Education, estimates of average student course length are developed for each course, along with estimates for the anticipated level of student drops and refunds from test performance guarantees, and these estimates are evaluated on an ongoing basis and adjusted as necessary. As Kaplan's businesses and related course offerings have changed, including more online programs, the complexity and significance of management's estimates have increased.

KHE provides non-academic operations support services to Purdue Global pursuant to a TOSA, which includes technology support, help-desk functions, human resources support for faculty and employees, admissions

support, financial aid administration, marketing and advertising, back-office business functions, and certain student recruitment services. KHE is not entitled to receive any reimbursement of costs incurred in providing support services, or any fee, unless and until Purdue Global has first covered all of its academic costs (subject to a cap), received payment for cost efficiencies, if any, and during the first five years of the TOSA receive a priority payment of $10 million per year in addition to the operating cost reimbursements and cost efficiency payments. KHE will receive reimbursement for its operating costs of providing the support services after payment of Purdue Global's operating costs, cost efficiency payments, and priority payment. If there are sufficient revenues, KHE may be entitled to a cost efficiency payment, if any, and additional fee equal to 12.5% of Purdue Global's revenue. Subject to certain limitations, a portion of the fee that is earned by KHE in one year may be carried over to subsequent years for payment to Kaplan.

The support fee and reimbursement for KHE support costs are entirely dependent on the availability of cash at the end of Purdue Global's fiscal year (June 30), and therefore, all consideration in the contract is variable. The Company uses significant judgment to forecast the operating results of Purdue Global, the availability of cash at the end of each fiscal year, and the consideration it expects to receive from Purdue Global annually. Key assumptions used in the forecast model include student census and degree enrollment data, Purdue Global and KHE expenses, changes to working capital, contractually stipulated minimum payments, and lead conversion rates. The forecast is updated as uncertainties are resolved. The Company reviews and updates the assumptions regularly, as a significant change in one or more of these estimates could affect revenue recognized. Changes to the estimated variable consideration were not material for the year ended December 31, 2022.

A Kaplan International business has a contract with an examination body through August 2029 comprised of two performance obligations, one to build and create a professional exam and another to manage the delivery of that exam to qualified candidates. The first obligation was completed in 2021. The second obligation began after the first obligation was completed and is expected to continue through the end of the contract term. Revenues are recognized for both of these obligations by allocating the transaction price based on forecasted financial results and the use of a market-based profit margin applied to costs incurred during the financial reporting period. This profit margin, determined at contract inception, is different for each obligation as a result of the different value created by each distinct obligation. The forecast, including key assumptions such as expected candidate volumes and related exam-management expenses, is updated as future uncertainties are resolved, which may result in changes to the transaction price. The Company reviews and updates the assumptions regularly, as a significant change in one or more of these estimates could affect revenue recognized. Changes to the estimated variable consideration were not material for the year ended December 31, 2022.

The determination of whether revenue should be reported on a gross or net basis is based on an assessment of whether the Company acts as a principal or an agent in the transaction. In certain cases, the Company is considered the agent, and the Company records revenue equal to the net amount retained when the fee is earned. In these cases, costs incurred with third-party suppliers is excluded from the Company's revenue. The Company assesses whether it obtained control of the specified goods or services before they are transferred to the customer as part of this assessment. In addition, the Company considers other indicators such as the party primarily responsible for fulfillment, inventory risk and discretion in establishing price.

Accounts receivable have been reduced by an allowance that reflects the current expected credit losses associated with the receivables. This estimated allowance is based on historical write-offs, current macroeconomic conditions, reasonable and supportable forecasts of future economic conditions and management's evaluation of the financial condition of the customer. The Company generally considers an account past due or delinquent when a student or customer misses a scheduled payment. The Company writes off accounts receivable balances deemed uncollectible against the allowance for credit losses following the passage of a certain period of time, or generally when the account is turned over for collection to an outside collection agency.

Goodwill and Other Intangible Assets. The Company has a significant amount of goodwill and indefinite-lived intangible assets that are reviewed at least annually for possible impairment.

(in millions)	As of December 31 2022	2021
Goodwill and indefinite-lived intangible assets	**$1,739.9**	$1,791.8
Total assets	**6,582.2**	7,425.5
Percentage of goodwill and indefinite-lived intangible assets to total assets	**26%**	24%

The Company performs its annual goodwill and intangible assets impairment test as of November 30. Goodwill and other intangible assets are reviewed for possible impairment between annual tests if an event occurred or circumstances changed that would more likely than not reduce the fair value of the reporting unit or other intangible assets below its carrying value.

Goodwill

The Company tests its goodwill at the reporting unit level, which is an operating segment or one level below an operating segment. The Company initially performs an assessment of qualitative factors to determine if it is necessary to perform a quantitative goodwill impairment test. The Company quantitatively tests goodwill for impairment if, based on its assessment of the qualitative factors, it determines that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, or if it decides to bypass the qualitative assessment. The quantitative goodwill impairment test compares the estimated fair value of a reporting unit with its carrying amount, including goodwill. An impairment charge is recognized for the amount by which the carrying amount exceeds the reporting unit's fair value.

In conjunction with the Company's annual impairment review, as a result of the weakened current outlook for digital advertising and consumer demand for art and related goods following substantial declines in revenues and significant operating losses at Leaf, the Company recorded a $84.5 million and $17.6 million goodwill impairment charge at the Leaf Media and Leaf Marketplace reporting units, respectively. The Company estimated the fair value of the reporting units by utilizing a discounted cash flow model. The carrying value of each reporting unit exceeded its estimated fair value, resulting in a goodwill impairment charge for the amount by which the carrying value exceeded the estimated fair value after taking into account the effect of deferred income taxes. As a result of the impairment charge, no goodwill remains at the Leaf Marketplace reporting unit. Leaf is included in other businesses.

The Company had 20 reporting units as of December 31, 2022. The reporting units with significant goodwill balances as of December 31, 2022, were as follows, representing 90% of the total goodwill of the Company:

(in millions)	Goodwill
Education	
Kaplan international	$ 579.6
Higher education	63.2
Supplemental education	171.6
Television broadcasting	190.8
Healthcare	135.9
Leaf Media	57.7
Hoover	91.3
Framebridge	60.9
Dekko	47.8
Total	$1,398.8

As of November 30, 2022, in connection with the Company's annual impairment testing, the Company decided to perform the quantitative goodwill impairment process at all of the reporting units. The Company's policy

requires the performance of a quantitative impairment review of the goodwill at least once every three years. The Company used a discounted cash flow model, and, where appropriate, a market value approach was also utilized to supplement the discounted cash flow model to determine the estimated fair value of its reporting units. The Company made estimates and assumptions regarding future cash flows, discount rates, long-term growth rates and market values to determine each reporting unit's estimated fair value. The methodology used to estimate the fair value of the Company's reporting units on November 30, 2022, was consistent with the one used during the 2021 annual goodwill impairment test.

The Company made changes to certain of its assumptions utilized in the discounted cash flow models for 2022 compared with the prior year to take into account changes in the economic environment, regulations and their impact on the Company's businesses. The key assumptions used by the Company were as follows:

- Expected cash flows underlying the Company's business plans for the periods 2023 through 2027 were used. The Company used expected cash flows for the periods 2023 through 2032 for the Hoover, Dekko, Framebridge, Leaf Media and Leaf Marketplace reporting units. The expected cash flows took into account historical growth rates, the effect of the changed economic outlook at the Company's businesses, industry challenges and an estimate for the possible impact of any applicable regulations.
- Cash flows beyond 2027 and 2032, where applicable, were projected to grow at a long-term growth rate, which the Company estimated between 1.5% and 3% for each reporting unit.
- The Company used a discount rate of 10% to 23% to risk adjust the cash flow projections in determining the estimated fair value.

The fair value of each of the reporting units exceeded its respective carrying value as of November 30, 2022, with the exception of the Leaf Media and Leaf Marketplace reporting units as described above.

The estimated fair values of the Dekko, Framebridge, and Leaf Media reporting units exceeded their carrying values by a margin less than 25%. The Company recorded goodwill impairments at the Leaf Media and Dekko reporting units in 2022 and 2021, respectively. The total goodwill at these reporting units was $166.4 million as of December 31, 2022, or 11% of the total goodwill of the Company. There exists a reasonable possibility that a decrease in the assumed projected cash flows or long-term growth rate, or an increase in the discount rate assumption used in the discounted cash flow model of these reporting units, could result in additional impairment charges.

The estimated fair value of the Company's other reporting units with significant goodwill balances exceeded their respective carrying values by a margin in excess of 25%. It is possible that impairment charges could occur in the future, as changes in market conditions and the inherent variability in projecting future operating performance could result in adverse changes in projections for future operating results or other key assumptions, such as projected revenue, profit margin, capital expenditures or cash flows associated with fair value estimates and could lead to additional future impairments, which could be material.

Indefinite-Lived Intangible Assets

The Company initially assesses qualitative factors to determine if it is more likely than not that the fair value of its indefinite-lived intangible assets is less than its carrying value. The Company compares the fair value of the indefinite-lived intangible asset with its carrying value if the qualitative factors indicate it is more likely than not that the fair value of the asset is less than its carrying value or if it decides to bypass the qualitative assessment. The Company records an impairment loss if the carrying value of the indefinite-lived intangible assets exceeds the fair value of the assets for the difference in the values. The Company uses a discounted cash flow model, and, in certain cases, a market value approach is also utilized to supplement the discounted cash flow model to determine the estimated fair value of the indefinite-lived intangible assets. The Company makes estimates and assumptions regarding future cash flows, discount rates, long-term growth rates and other market values to

determine the estimated fair value of the indefinite-lived intangible assets. The Company's policy requires the performance of a quantitative impairment review of the indefinite-lived intangible assets at least once every three years.

The Company's intangible assets with an indefinite life are principally from trade names, franchise rights and FCC licenses. The fair value of the indefinite-lived intangible assets exceeded their respective carrying values as of November 30, 2022. There is always a possibility that impairment charges could occur in the future, as changes in market conditions and the inherent variability in projecting future operating performance could result in adverse changes in projections for future operating results or other key assumptions, such as projected revenue, profit margin, capital expenditures or cash flows associated with fair value estimates and could lead to additional future impairments, which could be material.

Pension Costs. The Company sponsors a defined benefit pension plan for eligible employees in the U.S. Excluding curtailment gains, settlement gains and special termination benefits, the Company's net pension credit was $170.2 million, $93.0 million and $55.4 million for 2022, 2021 and 2020, respectively. The Company's pension benefit obligation and related credits are actuarially determined and are impacted significantly by the Company's assumptions related to future events, including the discount rate, expected return on plan assets and rate of compensation increases. The Company evaluates these critical assumptions at least annually and, periodically, evaluates other assumptions involving demographic factors, such as retirement age, mortality and turnover, and updates them to reflect its experience and expectations for the future. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors.

The Company assumed a 6.25% expected return on plan assets for 2022, 2021 and 2020. The Company's actual (loss) return on plan assets was (23.4%) in 2022, 24.4% in 2021 and 25.4% in 2020. The 10-year and 20-year actual returns on plan assets on an annual basis were 8.8% and 8.6%, respectively.

Accumulated and projected benefit obligations are measured as the present value of future cash payments. The Company discounts those cash payments using the weighted average of market-observed yields for high-quality fixed-income securities with maturities that correspond to the payment of benefits. Lower discount rates increase present values and generally increase subsequent-year pension costs; higher discount rates decrease present values and decrease subsequent-year pension costs. The Company's discount rate at December 31, 2022, 2021 and 2020, was 5.5%, 2.9% and 2.5%, respectively, reflecting market interest rates.

Changes in key assumptions for the Company's pension plan would have had the following effects on the 2022 pension credit, excluding curtailment gains, settlement gains and special termination benefits:

- Expected return on assets – A 1% increase or decrease to the Company's assumed expected return on plan assets would have increased or decreased the pension credit by approximately $26.8 million.
- Discount rate – A 1% decrease to the Company's assumed discount rate would have decreased the pension credit by approximately $15.0 million. A 1% increase to the Company's assumed discount rate would have increased the pension credit by approximately $12.4 million.

The Company's net pension credit includes an expected return on plan assets component, calculated using the expected return on plan assets assumption applied to a market-related value of plan assets. The market-related value of plan assets is determined using a five-year average market value method, which recognizes realized and unrealized appreciation and depreciation in market values over a five-year period. The value resulting from applying this method is adjusted, if necessary, such that it cannot be less than 80% or more than 120% of the market value of plan assets as of the relevant measurement date. As a result, year-to-year increases or decreases in the market-related value of plan assets impact the return on plan assets component of pension credit for the year.

At the end of each year, differences between the actual return on plan assets and the expected return on plan assets are combined with other differences in actual versus expected experience to form a net unamortized

actuarial gain or loss in accumulated other comprehensive income. Only those net actuarial gains or losses in excess of the deferred realized and unrealized appreciation and depreciation are potentially subject to amortization.

The types of items that generate actuarial gains and losses that may be subject to amortization in net periodic pension (credit) cost include the following:

- Asset returns that are more or less than the expected return on plan assets for the year;
- Actual participant demographic experience different from assumed (retirements, terminations and deaths during the year);
- Actual salary increases different from assumed; and
- Any changes in assumptions that are made to better reflect anticipated experience of the plan or to reflect current market conditions on the measurement date (discount rate, longevity increases, changes in expected participant behavior and expected return on plan assets).

Amortization of the unrecognized actuarial gain or loss is included as a component of pension credit for a year if the magnitude of the net unamortized gain or loss in accumulated other comprehensive income exceeds 10% of the greater of the benefit obligation or the market-related value of assets (10% corridor). The amortization component is equal to that excess divided by the average remaining service period of active employees expected to receive benefits under the plan. At the end of 2019, the Company had no net unamortized actuarial gains in accumulated other comprehensive income subject to amortization outside the 10% corridor, and therefore, no amortized gain was included in the pension credit for 2020.

During 2020, there were significant pension asset gains offset by a decrease in the discount rate that resulted in net unamortized actuarial gains in accumulated other comprehensive income subject to amortization outside the 10% corridor, and therefore, an amortized gain of $7.9 million was included in the pension credit for 2021.

During 2021, there were significant pension asset gains and an increase in the discount rate that resulted in net unamortized actuarial gains in accumulated other comprehensive income subject to amortization outside the 10% corridor, and therefore, an amortized gain of $68.7 million was included in the pension credit for 2022.

During 2022, there were significant pension asset losses partially offset by an increase in the discount rate. The Company currently estimates that there will be net unamortized actuarial gains in accumulated other comprehensive income subject to amortization outside the 10% corridor, and therefore, an amortized gain amount of $40.6 million is included in the estimated pension credit for 2023.

Overall, the Company estimates that it will record a net pension credit of approximately $109 million in 2023.

Note 15 to the Company's Consolidated Financial Statements provides additional details surrounding pension costs and related assumptions.

Accounting for Income Taxes.

Valuation Allowances

Deferred income taxes arise from temporary differences between the tax and financial statement recognition of assets and liabilities. In evaluating its ability to recover deferred tax assets within the jurisdiction from which they arise, the Company considers all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial operations. These assumptions require significant judgment about forecasts of future taxable income.

As of December 31, 2022, the Company had state income tax net operating loss carryforwards of $1,049.7 million, which will expire at various future dates. Also at December 31, 2022, the Company had

$91.1 million of non-U.S. income tax loss carryforwards, of which $50.7 million may be carried forward indefinitely; $26.0 million of losses that, if unutilized, will expire in varying amounts through 2027; and $14.4 million of losses that, if unutilized, will start to expire after 2027. At December 31, 2022, the Company has established approximately $62.8 million in total valuation allowances, primarily against deferred state tax assets, net of U.S. Federal income taxes, and non-U.S. deferred tax assets, as the Company believes that it is more likely than not that the benefit from certain state and non-U.S. net operating loss carryforwards and other deferred tax assets will not be realized. The Company has established valuation allowances against state income tax benefits recognized, without considering potentially offsetting deferred tax liabilities established with respect to prepaid pension cost and goodwill. Prepaid pension cost and goodwill have not been considered a source of future taxable income for realizing deferred tax benefits recognized since these temporary differences are not likely to reverse in the foreseeable future. However, certain deferred state tax assets have an indefinite life. As a result, the Company has considered deferred tax liabilities for prepaid pension cost and goodwill as a source of future taxable income for realizing those deferred state tax assets. The valuation allowances established against state and non-U.S. income tax benefits recorded may increase or decrease within the next 12 months, based on operating results, the market value of investment holdings or business and tax planning strategies; as a result, the Company is unable to estimate the potential tax impact, given the uncertain operating and market environment. The Company will be monitoring future operating results and projected future operating results on a quarterly basis to determine whether the valuation allowances provided against state and non-U.S. deferred tax assets should be increased or decreased, as future circumstances warrant.

Recent Accounting Pronouncements. See Note 2 to the Company's Consolidated Financial Statements for a discussion of recent accounting pronouncements.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and
Stockholders of Graham Holdings Company

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Graham Holdings Company and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of operations, of comprehensive (loss) income, of changes in common stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in

accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

Critical Audit Matters

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 (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Annual Goodwill Impairment Assessments – Leaf Media, Leaf Marketplace, Framebridge, and Dekko Reporting Units

As described in Notes 2 and 9 to the consolidated financial statements, the Company's consolidated goodwill balance was $1,561.0 million as of December 31, 2022, and the goodwill associated with the Leaf Media, Framebridge, and Dekko reporting units makes up a portion of the consolidated goodwill balance as of December 31, 2022. Management reviews goodwill for possible impairment at least annually, as of November 30, or between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of the reporting unit below its carrying value. As disclosed by management, an impairment charge is recognized for the amount by which the carrying value exceeds the reporting unit's fair value. The fair value of each of the reporting units exceeded its respective carrying value as of November 30, 2022, with the exception of the Leaf Media and Leaf Marketplace reporting units for which the Company recorded a $84.5 million and $17.6 million goodwill impairment charge, respectively. As a result of the impairment charge, no goodwill remains at the Leaf Marketplace reporting unit as of December 31, 2022. Management used a discounted cash flow model and, where appropriate, a market value approach to supplement the discounted cash flow model, to determine the estimated fair value of each reporting unit. Management made assumptions regarding estimated future cash flows, discount rates, long-term growth rates, and market values to determine the estimated fair value of each reporting unit.

The principal considerations for our determination that performing procedures relating to the annual goodwill impairment assessments of the Leaf Media, Leaf Marketplace, Framebridge, and Dekko reporting units is a critical audit matter are (i) the significant judgment by management when developing the fair value estimate of the reporting units; (ii) a high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating management's significant assumptions related to the estimated future cash flows and discount rates used in the discounted cash flow model; and (iii) the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness

of controls relating to management's goodwill impairment assessments, including controls over the valuation of the Leaf Media, Leaf Marketplace, Framebridge, and Dekko reporting units. These procedures also included, among others (i) testing management's process for developing the fair value estimate of the Leaf Media, Leaf Marketplace, Framebridge, and Dekko reporting units; (ii) evaluating the appropriateness of the discounted cash flow model; (iii) testing the completeness and accuracy of underlying data used in the discounted cash flow model; and (iv) evaluating the reasonableness of the significant assumptions related to the estimated future cash flows and discount rates. Evaluating management's significant assumption related to the estimated future cash flows involved evaluating whether the assumption used by management was reasonable considering (i) the past and present performance of the reporting units; (ii) the consistency with external market and industry data; and (iii) whether the assumption was consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in evaluating (i) the appropriateness of the discounted cash flow model and (ii) the reasonableness of the discount rate significant assumption.

/s/ PricewaterhouseCoopers LLP

Washington, District of Columbia
February 24, 2023

We have served as the Company's auditor since 1946.

GRAHAM HOLDINGS COMPANY
CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except per share amounts)	Year Ended December 31 2022	2021	2020
Operating Revenues			
Sales of services	**$2,328,869**	$2,089,800	$2,056,228
Sales of goods	**1,595,624**	1,096,174	832,893
	3,924,493	3,185,974	2,889,121
Operating Costs and Expenses			
Cost of services sold (exclusive of items shown below)	**1,346,519**	1,243,384	1,239,241
Cost of goods sold (exclusive of items shown below)	**1,311,199**	871,137	672,865
Selling, general and administrative	**921,739**	831,853	715,401
Depreciation of property, plant and equipment	**73,297**	71,415	74,257
Amortization of intangible assets	**58,851**	57,870	56,780
Impairment of goodwill and other long-lived assets	**128,990**	32,940	30,170
	3,840,595	3,108,599	2,788,714
Income from Operations	**83,898**	77,375	100,407
Equity in (losses) earnings of affiliates, net	**(2,837)**	17,914	6,664
Interest income	**3,226**	3,409	3,871
Interest expense	**(54,403)**	(33,943)	(38,310)
Non-operating pension and postretirement benefit income, net	**197,939**	109,230	59,315
(Loss) gain on marketable equity securities, net	**(139,589)**	243,088	60,787
Other income, net	**33,500**	32,554	214,534
Income Before Income Taxes	**121,734**	449,627	407,268
Provision for Income Taxes	**51,300**	96,300	107,300
Net Income	**70,434**	353,327	299,968
Net (Income) Loss Attributable to Noncontrolling Interests	**(3,355)**	(1,252)	397
Net Income Attributable to Graham Holdings Company Common Stockholders	**$ 67,079**	$ 352,075	$ 300,365
Per Share Information Attributable to Graham Holdings Company Common Stockholders			
Basic net income per common share	**$ 13.83**	$ 70.65	$ 58.30
Basic average number of common shares outstanding	**4,823**	4,951	5,124
Diluted net income per common share	**$ 13.79**	$ 70.45	$ 58.13
Diluted average number of common shares outstanding	**4,836**	4,965	5,139

See accompanying Notes to Consolidated Financial Statements.

GRAHAM HOLDINGS COMPANY
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME

(in thousands)	Year Ended December 31		
	2022	**2021**	**2020**
Net Income	**$ 70,434**	$ 353,327	$299,968
Other Comprehensive (Loss) Income, Before Tax			
Foreign currency translation adjustments:			
Translation adjustments arising during the year	**(48,340)**	(16,052)	31,642
Pension and other postretirement plans:			
Actuarial (loss) gain	**(727,097)**	519,595	365,164
Prior service cost	**–**	(2)	(69)
Amortization of net actuarial (gain) loss included in net income	**(70,833)**	(5,486)	1,219
Amortization of net prior service cost included in net income	**2,864**	3,170	2,680
Settlement included in net income	**–**	(120)	–
	(795,066)	517,157	368,994
Cash flow hedges gain (loss)	**4,765**	349	(1,282)
Other Comprehensive (Loss) Income, Before Tax	**(838,641)**	501,454	399,354
Income tax benefit (expense) related to items of other comprehensive (loss) income	**203,404**	(133,380)	(99,335)
Other Comprehensive (Loss) Income, Net of Tax	**(635,237)**	368,074	300,019
Comprehensive (Loss) Income	**(564,803)**	721,401	599,987
Comprehensive (income) loss attributable to noncontrolling interests	**(3,355)**	(1,252)	397
Total Comprehensive (Loss) Income Attributable to Graham Holdings Company	**$(568,158)**	$ 720,149	$600,384

See accompanying Notes to Consolidated Financial Statements.

GRAHAM HOLDINGS COMPANY
CONSOLIDATED BALANCE SHEETS

(In thousands, except share amounts)	As of December 31	
	2022	2021
Assets		
Current Assets		
Cash and cash equivalents	**$ 169,319**	$ 145,886
Restricted cash	**20,467**	12,175
Investments in marketable equity securities and other investments	**622,408**	824,445
Accounts receivable, net	**560,779**	607,471
Inventories and contracts in progress	**226,811**	141,471
Prepaid expenses	**97,450**	81,741
Income taxes receivable	**9,313**	32,744
Other current assets	**1,547**	1,241
Total Current Assets	**1,708,094**	1,847,174
Property, Plant and Equipment, Net	**503,000**	468,126
Lease Right-of-Use Assets	**429,403**	437,969
Investments in Affiliates	**186,419**	155,444
Goodwill, Net	**1,560,953**	1,649,582
Indefinite-Lived Intangible Assets	**178,934**	142,180
Amortized Intangible Assets, Net	**161,422**	247,120
Prepaid Pension Cost	**1,658,046**	2,306,514
Deferred Income Taxes	**6,812**	7,900
Deferred Charges and Other Assets (includes $646 and $782 of restricted cash)	**189,132**	163,516
Total Assets	**$ 6,582,215**	$ 7,425,525
Liabilities and Equity		
Current Liabilities		
Accounts payable and accrued liabilities	**$ 563,005**	$ 583,629
Deferred revenue	**381,416**	358,720
Income taxes payable	**3,766**	4,585
Current portion of lease liabilities	**70,007**	77,655
Current portion of long-term debt	**155,813**	141,749
Total Current Liabilities	**1,174,007**	1,166,338
Accrued Compensation and Related Benefits	**134,921**	175,391
Other Liabilities	**37,506**	36,497
Deferred Income Taxes	**466,275**	676,706
Mandatorily Redeemable Noncontrolling Interest	**30,845**	13,661
Lease Liabilities	**393,626**	405,200
Long-Term Debt	**570,547**	525,752
Total Liabilities	**2,807,727**	2,999,545
Commitments and Contingencies (Note 18)		
Redeemable Noncontrolling Interests	**21,827**	14,311
Preferred Stock, $1 par value; 977,000 shares authorized, none issued	**–**	–
Common Stockholders' Equity		
Common stock		
Class A Common stock, $1 par value; 7,000,000 shares authorized; 964,001 shares issued and outstanding	**964**	964
Class B Common stock, $1 par value; 40,000,000 shares authorized; 19,035,999 shares issued; 3,822,601 and 3,942,065 shares outstanding	**19,036**	19,036
Capital in excess of par value	**390,438**	389,456
Retained earnings	**7,163,128**	7,126,761
Accumulated other comprehensive income, net of taxes		
Cumulative foreign currency translation adjustment	**(54,638)**	(6,298)
Unrealized gain on pensions and other postretirement plans	**388,591**	979,157
Cash flow hedges	**2,198**	(1,471)
Cost of 15,213,398 and 15,093,934 shares of Class B common stock held in treasury	**(4,178,334)**	(4,108,022)
Total Common Stockholders' Equity	**3,731,383**	4,399,583
Noncontrolling Interests	**21,278**	12,086
Total Equity	**3,752,661**	4,411,669
Total Liabilities and Equity	**$ 6,582,215**	$ 7,425,525

See accompanying Notes to Consolidated Financial Statements.

GRAHAM HOLDINGS COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)	Year Ended December 31 2022	2021	2020
Cash Flows from Operating Activities			
Net Income	**$ 70,434**	$ 353,327	$ 299,968
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, amortization and goodwill and other long-lived asset impairment	**261,138**	162,225	161,207
Amortization of lease right-of-use asset	**67,568**	73,752	89,956
Net pension benefit and special separation benefit expense	**(166,611)**	(91,898)	(41,573)
Loss (gain) on marketable equity securities and cost method investments, net	**134,011**	(254,844)	(57,669)
Credit loss expense and provision for other receivables	**2,958**	6,824	10,667
Stock-based compensation expense, net of forfeitures	**6,121**	5,659	6,348
Contingent consideration fair value measurements and accretion	**(5,105)**	(4,207)	2,895
Foreign exchange loss	**2,023**	179	2,153
Gain on disposition and write-downs of businesses, property, plant and equipment, investments and other assets, net	**(24,220)**	(8,554)	(214,926)
Equity in earnings of affiliates, net of distributions	**13,503**	4,917	6,592
(Benefit from) provision for deferred income taxes	**(3,844)**	65,046	14,377
Change in operating assets and liabilities:			
Accounts receivable	**41,635**	(59,292)	61,328
Inventories	**(64,324)**	4,551	3,786
Accounts payable and accrued liabilities	**(44,870)**	32,397	(32,714)
Deferred revenue	**33,384**	19,086	(25,728)
Income taxes receivable/payable	**6,766**	(8,689)	3,310
Lease liabilities	**(78,471)**	(85,147)	(91,478)
Other assets and other liabilities, net	**(21,275)**	(14,144)	11,735
Other	**4,783**	1,238	429
Net Cash Provided by Operating Activities	**235,604**	202,426	210,663
Cash Flows from Investing Activities			
Investments in certain businesses, net of cash acquired	**(130,106)**	(351,882)	(20,080)
Proceeds from sales of marketable equity securities	**102,040**	65,499	93,775
Purchases of property, plant and equipment	**(82,684)**	(162,537)	(69,591)
Purchases of marketable equity securities	**(40,518)**	(48,036)	(20,004)
Investments in equity affiliates, cost method and other investments	**(38,894)**	(8,531)	(12,367)
Net proceeds from sales of businesses, property, plant and equipment and other assets	**5,057**	10,295	225,570
Other	**1,039**	557	2,068
Net Cash (Used in) Provided by Investing Activities	**(184,066)**	(494,635)	199,371
Cash Flows from Financing Activities			
Issuance of borrowings	**77,299**	70,184	2,084
Common shares repurchased	**(71,386)**	(55,683)	(161,829)
Dividends paid	**(30,712)**	(30,136)	(29,970)
Net proceeds from (repayments of) vehicle floor plan payable	**26,230**	(10,563)	(14,160)
Repayments of borrowings	**(14,484)**	(49,645)	(83,360)
Deferred payments of acquisitions	**(5,731)**	(30,866)	(19,348)
(Repayments of) proceeds from bank overdrafts	**(5,060)**	3,410	1,636
Issuance of noncontrolling interest	**4,918**	3,777	–
Proceeds from sale of noncontrolling interest	**3,200**	–	–
Net borrowings under revolving credit facilities	**3,000**	134,696	76,241
Proceeds from exercise of stock options	**1,817**	–	25,129
Purchase of noncontrolling interest	**(1,200)**	(3,508)	–
Other	**(5,998)**	(639)	(425)
Net Cash (Used in) Provided by Financing Activities	**(18,107)**	31,027	(204,002)
Effect of Currency Exchange Rate Change	**(1,842)**	(3,029)	2,978
Net Increase (Decrease) in Cash and Cash Equivalents and Restricted Cash	**31,589**	(264,211)	209,010
Cash and Cash Equivalents and Restricted Cash at Beginning of Year	**158,843**	423,054	214,044
Cash and Cash Equivalents and Restricted Cash at End of Year	**$ 190,432**	$ 158,843	$ 423,054
Supplemental Cash Flow Information			
Cash paid during the year for:			
Income taxes	**$ 48,000**	$ 39,000	$ 91,000
Interest	**$ 37,000**	$ 30,000	$ 31,000

See accompanying Notes to Consolidated Financial Statements.

GRAHAM HOLDINGS COMPANY
CONSOLIDATED STATEMENTS OF CHANGES IN COMMON STOCKHOLDERS' EQUITY

(in thousands)	Class A Common Stock	Class B Common Stock	Capital in Excess of Par Value	Retained Earnings	Accumulated Other Comprehensive Income	Treasury Stock	Noncontrolling Interest	Total Equity	Redeemable Noncontrolling Interest
As of December 31, 2019	$964	$19,036	$381,669	$6,534,427	$ 303,295	$(3,920,152)	$ 7,557	$3,326,796	$ 5,655
Net income for the year				299,968				299,968	
Net loss attributable to noncontrolling interest				386			(386)	–	
Acquisition of redeemable noncontrolling interest								–	6,005
Net loss attributable to redeemable noncontrolling interests				11				11	(11)
Change in redemption value of redeemable noncontrolling interests							273	273	279
Distribution to noncontrolling interest							(353)	(353)	
Dividends paid on common stock				(29,970)				(29,970)	
Repurchase of Class B common stock						(161,829)		(161,829)	
Issuance of Class B common stock, net of restricted stock award forfeitures			(411)			24,988		24,577	
Amortization of unearned stock compensation and stock option expense			6,901					6,901	
Other comprehensive income, net of income taxes					300,019			300,019	
As of December 31, 2020	964	19,036	388,159	6,804,822	603,314	(4,056,993)	7,091	3,766,393	11,928
Net income for the year				353,327				353,327	
Noncontrolling interest capital contribution							3,350	3,350	
Net income attributable to noncontrolling interests				(1,943)			1,943	–	
Acquisition of redeemable noncontrolling interest								–	6,617
Net loss attributable to redeemable noncontrolling interests				691				691	(691)
Change in redemption value of redeemable noncontrolling interests			292				257	549	(35)
Distribution to noncontrolling interest							(555)	(555)	
Dividends paid on common stock				(30,136)				(30,136)	
Repurchase of Class B common stock						(55,683)		(55,683)	
Issuance of Class B common stock, net of restricted stock award forfeitures			(5,593)			4,654		(939)	
Amortization of unearned stock compensation and stock option expense			6,598					6,598	
Other comprehensive income, net of income taxes					368,074			368,074	
Purchase of redeemable noncontrolling interest								–	(3,508)
As of December 31, 2021	964	19,036	389,456	7,126,761	971,388	(4,108,022)	12,086	4,411,669	14,311
Net income for the year				**70,434**				**70,434**	
Noncontrolling interest capital contributions							**3,900**	**3,900**	**1,050**
Acquisition of noncontrolling interest							**512**	**512**	
Sale of equity in subsidiary			**146**				**3,054**	**3,200**	
Net income attributable to noncontrolling interests				**(3,384)**			**3,384**	**–**	
Acquisition of redeemable noncontrolling interest								**–**	**2,164**
Net loss attributable to redeemable noncontrolling interests				**29**				**29**	**(29)**
Change in redemption value of redeemable noncontrolling interests			**(6,027)**				**247**	**(5,780)**	**6,281**
Distribution to noncontrolling interests							**(1,905)**	**(1,905)**	**(750)**
Dividends paid on common stock				**(30,712)**				**(30,712)**	
Repurchase of Class B common stock						**(71,386)**		**(71,386)**	
Issuance of Class B common stock, net of restricted stock award forfeitures			**(733)**			**1,074**		**341**	
Amortization of unearned stock compensation and stock option expense			**7,596**					**7,596**	
Other comprehensive loss, net of income taxes					**(635,237)**			**(635,237)**	
Purchase of redeemable noncontrolling interest								**–**	**(1,200)**
As of December 31, 2022	**$964**	**$19,036**	**$390,438**	**$7,163,128**	**$ 336,151**	**$(4,178,334)**	**$21,278**	**$3,752,661**	**$ 21,827**

See accompanying Notes to Consolidated Financial Statements.

GRAHAM HOLDINGS COMPANY
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. ORGANIZATION AND NATURE OF OPERATIONS

Graham Holdings Company (the Company), is a diversified holding company. The Company's Kaplan subsidiary provides a wide variety of educational services, both domestically and outside the United States (U.S.). The Company's media operations comprise the ownership and operation of seven television broadcasting stations.

Education—Kaplan, Inc. provides an extensive range of educational services for students and professionals. Kaplan's various businesses comprise three categories: Kaplan International, Higher Education (KHE) and Supplemental Education.

Media—The Company's diversified media operations comprise television broadcasting, several websites and print publications, podcast content and a marketing solutions provider.

Television broadcasting. As of December 31, 2022, the Company owned seven television stations located in Houston, TX; Detroit, MI; Orlando, FL; San Antonio, TX; Roanoke, VA; and two stations in Jacksonville, FL. All stations are network-affiliated except for WJXT in Jacksonville, FL.

Manufacturing—The Company's manufacturing businesses include Hoover, Dekko, Joyce/Dayton and Forney.

Other—The Company's other business operations include automotive dealerships, restaurants and entertainment venues, consumer internet brands, custom framing services and home health and hospice services.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Principles of Consolidation. The accompanying Consolidated Financial Statements have been prepared in accordance with generally accepted accounting principles (GAAP) in the U.S. and include the assets, liabilities, results of operations and cash flows of the Company and its majority-owned and controlled subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates. The preparation of financial statements in conformity with GAAP requires management to make estimates and judgments that affect the amounts reported in the financial statements. Management bases its estimates and assumptions on historical experience and on various other factors that are believed to be reasonable under the circumstances. Due to the inherent uncertainty involved in making estimates, actual results reported in future periods may be affected by changes in those estimates. On an ongoing basis, the Company evaluates its estimates and assumptions.

Business Combinations. The purchase price of an acquisition is allocated to the assets acquired, including intangible assets, and liabilities assumed, based on their respective fair values at the acquisition date. Acquisition-related costs are expensed as incurred. The excess of the cost of an acquired entity over the net of the amounts assigned to the assets acquired and liabilities assumed is recognized as goodwill. The net assets and results of operations of an acquired entity are included in the Company's Consolidated Financial Statements from the acquisition date.

Cash and Cash Equivalents. Cash and cash equivalents consist of cash on hand, short-term investments with original maturities of three months or less and investments in money market funds with weighted average maturities of three months or less.

Restricted Cash. Restricted cash represents amounts required to be held by non-U.S. higher education institutions for prepaid tuition pursuant to foreign government regulations. These regulations stipulate that the

Company has a fiduciary responsibility to segregate certain funds to ensure these funds are only used for the benefit of eligible students.

Concentration of Credit Risk. Cash and cash equivalents are maintained with several financial institutions domestically and internationally. Deposits held with banks may exceed the amount of insurance provided on such deposits. Generally, these deposits may be redeemed upon demand and are maintained with financial institutions with investment-grade credit ratings. The Company routinely assesses the financial strength of significant customers, and this assessment, combined with the large number and geographical diversity of its customers, limits the Company's concentration of risk with respect to receivables from contracts with customers.

Allowance for Credit Losses. Accounts receivable have been reduced by an allowance that reflects the current expected credit losses associated with the receivables. The current expected credit losses are estimated based on historical write-offs, current macroeconomic conditions and reasonable and supportable forecasts of future economic conditions. Reserves are also established against specific receivables based on aging category, historical collection experience and management's evaluation of the financial condition of the customer. The Company generally considers an account past due or delinquent when a student or customer misses a scheduled payment. The Company writes off accounts receivable balances deemed uncollectible against the allowance for credit losses following the passage of a certain period of time, or generally when the account is turned over for collection to an outside collection agency.

Investments in Equity Securities. The Company measures its investments in equity securities at fair value with changes in fair value recognized in earnings. The Company elected the measurement alternative to measure cost method investments that do not have readily determinable fair value at cost less impairment, adjusted by observable price changes with any fair value changes recognized in earnings. If the fair value of a cost method investment declines below its cost basis and the decline is considered other than temporary, the Company will record a write-down, which is included in earnings. The Company uses the average cost method to determine the basis of the securities sold.

Fair Value Measurements. Fair value measurements are determined based on the assumptions that a market participant would use in pricing an asset or liability based on a three-tiered hierarchy that draws a distinction between market participant assumptions based on (i) observable inputs, such as quoted prices in active markets (Level 1); (ii) inputs other than quoted prices in active markets that are observable either directly or indirectly (Level 2); and (iii) unobservable inputs that require the Company to use present value and other valuation techniques in the determination of fair value (Level 3). Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measure. The Company's assessment of the significance of a particular input to the fair value measurements requires judgment and may affect the valuation of the assets and liabilities being measured and their placement within the fair value hierarchy.

For assets that are measured using quoted prices in active markets, the total fair value is the published market price per unit multiplied by the number of units held, without consideration of transaction costs. Assets and liabilities that are measured using significant other observable inputs are primarily valued by reference to quoted prices of similar assets or liabilities in active markets, adjusted for any terms specific to that asset or liability.

The Company measures certain assets—including goodwill; intangible assets; property, plant and equipment; lease right-of-use assets; cost and equity-method investments—at fair value on a nonrecurring basis when they are deemed to be impaired. The fair value of these assets is determined with valuation techniques using the best information available and may include quoted market prices, market comparables and discounted cash flow models.

Fair Value of Financial Instruments. The carrying amounts reported in the Company's Consolidated Financial Statements for cash and cash equivalents, restricted cash, accounts receivable, accounts payable and

accrued liabilities, the current portion of deferred revenue and the current portion of debt approximate fair value because of the short-term nature of these financial instruments. The fair value of long-term debt is determined based on a number of observable inputs, including the current market activity of the Company's publicly traded notes, trends in investor demands and market values of comparable publicly traded debt. The fair value of interest rate hedges are determined based on a number of observable inputs, including time to maturity and market interest rates.

Inventories and Contracts in Progress. Inventories and contracts in progress are stated at the lower of cost or net realizable values and are based on the first-in, first-out (FIFO) method. Inventory costs include direct material, direct and indirect labor, and applicable manufacturing overhead. The Company allocates manufacturing overhead based on normal production capacity and recognizes unabsorbed manufacturing costs in earnings. The provision for excess and obsolete inventory is based on management's evaluation of inventories on hand relative to historical usage, estimated future usage and technological developments.

Vehicle inventory is based on the specific identification method. The cost of new and used vehicle inventories includes the cost of any equipment added, reconditioning and transportation. In certain instances, vehicle manufacturers provide incentives which are reflected as a reduction in the carrying value of each vehicle purchased.

Property, Plant and Equipment. Property, plant and equipment is recorded at cost and includes interest capitalized in connection with major long-term construction projects. Replacements and major improvements are capitalized; maintenance and repairs are expensed as incurred. Depreciation is calculated using the straight-line method over the estimated useful lives of the property, plant and equipment: 3 to 20 years for machinery and equipment; 20 to 50 years for buildings. The costs of leasehold improvements are amortized over the lesser of their useful lives or the terms of the respective leases.

Evaluation of Long-Lived Assets. The recoverability of long-lived assets and finite-lived intangible assets is assessed whenever adverse events or changes in circumstances indicate that recorded values may not be recoverable. A long-lived asset is considered to not be recoverable when the undiscounted estimated future cash flows are less than the asset's recorded value. An impairment charge is measured based on estimated fair market value, determined primarily using estimated future cash flows on a discounted basis. Losses on long-lived assets to be disposed of are determined in a similar manner, but the fair market value would be reduced for estimated costs to dispose.

Goodwill and Other Intangible Assets. Goodwill is the excess of purchase price over the fair value of identified net assets of businesses acquired. The Company's intangible assets with an indefinite life are principally from trade names and trademarks, franchise agreements and Federal Communications Commission (FCC) licenses. Amortized intangible assets are primarily student and customer relationships and trade names and trademarks, with amortization periods up to 15 years. Costs associated with renewing or extending intangible assets are insignificant and expensed as incurred.

The Company reviews goodwill and indefinite-lived intangible assets at least annually, as of November 30, for possible impairment. Goodwill and indefinite-lived intangible assets are reviewed for possible impairment between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of the reporting unit or indefinite-lived intangible asset below its carrying value. The Company tests its goodwill at the reporting unit level, which is an operating segment or one level below an operating segment. The Company initially assesses qualitative factors to determine if it is necessary to perform the goodwill or indefinite-lived intangible asset quantitative impairment review. The Company reviews the goodwill and indefinite-lived assets for impairment using the quantitative process if, based on its assessment of the qualitative factors, it determines that it is more likely than not that the fair value of a reporting unit or indefinite-lived intangible asset is less than its carrying value, or if it decides to bypass the qualitative assessment. The Company uses a discounted cash flow model, and, where appropriate, a market value approach is also utilized to

supplement the discounted cash flow model, to determine the estimated fair value of its reporting units and indefinite-lived intangible assets. The Company makes assumptions regarding estimated future cash flows, discount rates, long-term growth rates and market values to determine the estimated fair value of each reporting unit and indefinite-lived intangible asset. If these estimates or related assumptions change in the future, the Company may be required to record impairment charges.

Investments in Affiliates. The Company uses the equity method of accounting for its investments in and earnings or losses of affiliates that it does not control, but over which it exerts significant influence. Significant influence is generally deemed to exist if the Company has an ownership interest in the voting stock of an investee between 20% and 50%. The Company also uses the equity method of accounting for its investments in a partnership or limited liability company with specific ownership accounts, if the Company has an ownership interest of 3% or more. The Company considers whether the fair values of any of its equity method investments have declined below their carrying values whenever adverse events or changes in circumstances indicate that recorded values may not be recoverable. If the Company considered any such decline to be other than temporary (based on various factors, including historical financial results, product development activities and the overall health of the affiliate's industry), a write-down would be recorded to estimated fair value. The Company records its share of the earnings or losses of its affiliates from their most recent available financial statements. In some instances, the reporting period of the affiliates' financial statements lag the Company's reporting period, but such lag is never more than three months.

Revenue Recognition. The Company identifies a contract for revenue recognition when there is approval and commitment from both parties, the rights of the parties and payment terms are identified, the contract has commercial substance and the collectability of consideration is probable. The Company evaluates each contract to determine the number of distinct performance obligations in the contract, which requires the use of judgment.

Education Revenue. Education revenue is primarily derived from postsecondary education and supplementary education services provided both domestically and abroad. Generally, tuition and other fees are paid upfront and recorded in deferred revenue in advance of the date when education services are provided to the student. In some instances, installment billing is available to students, which reduces the amount of cash consideration received in advance of performing the service. The contractual terms and conditions associated with installment billing indicate that the student is liable for the total contract price; therefore, mitigating the Company's exposure to losses associated with nonpayment. The Company determined the installment billing does not represent a significant financing component.

Kaplan International. Kaplan International provides higher education, professional education, and test preparation services and materials to students primarily in the United Kingdom (U.K.), Singapore, and Australia. Some Kaplan International contracts consist of one performance obligation that is a combination of indistinct promises to the student, while other Kaplan International contracts include multiple performance obligations as the promises in the contract are capable of being both distinct and distinct within the context of the contract. One Kaplan International business offers an option whereby students receive future services at a discount that is accounted for as a material right.

The transaction price is stated in the contract and known at the time of contract inception; therefore, no variable consideration exists. Revenue is allocated to each performance obligation based on its standalone selling price. Any discounts within the contract are allocated across all performance obligations unless observable evidence exists that the discount relates to a specific performance obligation or obligations in the contract. Kaplan International generally determines standalone selling prices based on prices charged to students.

Revenue is recognized ratably over the instruction period or access period for higher education, professional education and test preparation services. Kaplan International generally uses the time elapsed method, an input measure, as it best depicts the simultaneous consumption and delivery of these services. Course materials determined to be a separate performance obligation are recognized at the point in time when control transfers to the student, generally when the products are delivered to the student.

One Kaplan International business has a contract with a customer consisting of two performance obligations which consisted entirely of variable consideration at contract inception. The Company allocates revenue to each performance obligation based on the expected cost plus a margin. The margin was determined by a market assessment performed at contract inception. Revenue is recognized over time, using an input method, as the customer simultaneously benefits from the services as delivery occurs. The Company records a contract asset associated with this Kaplan International contract as the right to revenue is dependent on something other than the passage of time.

Kaplan Higher Education. KHE primarily provides non-academic operations support services to Purdue University Global (Purdue Global) pursuant to a Transition and Operations Support Agreement (TOSA). This contract has a 30-year term and consists of one performance obligation, which represents a series of daily promises to provide support services to Purdue Global. The transaction price is entirely made up of variable consideration related to the reimbursement of KHE support costs and the KHE fee. The TOSA outlines a payment structure, which dictates how cash will be distributed at the end of Purdue Global's fiscal year, which is the 30th of June. The collectability of the KHE support costs and KHE fee is entirely dependent on the availability of cash at the end of the fiscal year. This variable consideration is constrained based on fiscal year forecasts prepared for Purdue Global. The forecasts are updated throughout the fiscal year until the uncertainty is ultimately resolved, which is at the end of each Purdue Global fiscal year. As KHE's performance obligation is made up of a series, the variable consideration is allocated to the distinct service period to which it relates, which is the Purdue Global fiscal year.

Support services revenue is recognized over time based on the expenses incurred to date and the percentage of expected reimbursement. KHE fee revenue is also recognized over time based on the amount of Purdue Global revenue recognized to date and the percentage of fee expected to be collected for the fiscal year. The Company used these input measures as Purdue Global simultaneously receives and consumes the benefits of the services provided by KHE.

Kaplan Supplemental Education. Supplemental Education offers test preparation services and materials to students, as well as professional training and exam preparation for professional certifications and licensures to students. Generally, Supplemental Education contracts consist of multiple performance obligations as promises for these services are distinct within the context of the contract. The transaction price is stated in the contract and known at the time of contract inception, therefore no variable consideration exists. Revenue is allocated to each performance obligation based on its standalone selling price. Supplemental Education generally determines standalone selling prices based on the prices charged to students and professionals. Any discounts within the contract are allocated across all performance obligations unless observable evidence exists that the discount relates to a specific performance obligation in the contract.

Supplemental Education services revenue is recognized ratably over the period of access to the education materials. An estimate of the average access period is developed for each course, and this estimate is evaluated on an ongoing basis and adjusted as necessary. The time elapsed method, an input measure, is used as it best depicts the simultaneous consumption and availability of access to the services. Revenue associated with distinct course materials is recognized at the point in time when control transfers to the student, generally when products are delivered to the student.

Supplemental Education offers a guarantee on certain courses that gives students the ability to repeat a course if they are not satisfied with their exam score. The Company accounts for this guarantee as a separate performance obligation.

Television Broadcasting Revenue. Television broadcasting revenue at Graham Media Group (GMG) is primarily comprised of television and internet advertising revenue, and retransmission revenue.

Television Advertising Revenue. GMG accounts for the series of advertisements included in television advertising contracts as one performance obligation and recognizes advertising revenue over time. The Company

elected the right to invoice practical expedient, an output method, as GMG has the right to consideration that equals the value provided to the customer for advertisements delivered to date. As a result of the election to use the right to invoice practical expedient, GMG does not determine the transaction price or allocate any variable consideration at contract inception. Rather, GMG recognizes revenue commensurate with the amount to which GMG has the right to invoice the customer. Payment is typically received in arrears within 60 days of revenue recognition.

Retransmission Revenue. Retransmission revenue represents compensation paid by cable, satellite and other multichannel video programming distributors (MVPDs) to retransmit GMG's stations' broadcasts in their designated market areas. The retransmission rights granted to MVPDs are accounted for as a license of functional intellectual property as the retransmitted broadcast provides significant standalone functionality. As such, each retransmission contract with an MVPD includes one performance obligation for each station's retransmission license. GMG recognizes revenue using the usage-based royalty method, in which revenue is recognized in the month the broadcast is retransmitted based on the number of MVPD subscribers and the applicable per user rate identified in the retransmission contract. Payment is typically received in arrears within 60 days of revenue recognition.

Manufacturing Revenue. Manufacturing revenue consists primarily of product sales generated by four businesses: Hoover, Dekko, Joyce, and Forney. The Company has determined that each item ordered by the customer is a distinct performance obligation as it has standalone value and is distinct within the context of the contract. For arrangements with multiple performance obligations, the Company initially allocates the transaction price to each obligation based on its standalone selling price, which is the retail price charged to customers. Any discounts within the contract are allocated across all performance obligations unless observable evidence exists that the discount relates to a specific performance obligation or obligations in the contract.

The Company sells some products and services with a right of return. This right of return constitutes variable consideration and is constrained from revenue recognition on a portfolio basis, using the expected value method until the refund period expires.

The Company recognizes revenue when or as control transfers to the customer. Some manufacturing revenue is recognized ratably over the manufacturing period, if the product created for the customer does not have an alternative use to the Company and the Company has an enforceable right to payment for performance completed to date. The determination of the method by which the Company measures its progress toward the satisfaction of its performance obligations requires judgment. The Company measures its progress for these products using the units delivered method, an output measure. These arrangements represented 21%, 21%, and 23% of the manufacturing revenue recognized for the years ended December 31, 2022, 2021 and 2020, respectively.

Other manufacturing revenue is recognized at the point in time when control transfers to the customer, generally when the products are shipped. Some customers have a bill and hold arrangement with the Company. Revenue for bill and hold arrangements is recognized when control transfers to the customer, even though the customer does not have physical possession of the goods. Control transfers when the bill-and-hold arrangement has been requested from the customer, the product is identified as belonging to the customer and is ready for physical transfer, and the product cannot be directed for use by anyone but the customer.

Payment terms and conditions vary by contract, although terms generally include a requirement of payment within 90 days of delivery.

The Company evaluated the terms of the warranties and guarantees offered by its manufacturing businesses and determined that these should not be accounted for as a separate performance obligation as a distinct service is not identified.

Healthcare Revenue. The Company contracts with patients to provide home health or hospice services. Payment is typically received from third-party payors such as Medicare, Medicaid, and private insurers. The

payor is a third party to the contract that stipulates the transaction price of the contract. The Company identifies the patient as the party who benefits from its healthcare services and as such, the patient is its customer.

The Centers for Medicare and Medicaid Services released a revised reimbursement structure under the Patient Driven Groupings Model (PDGM) for Medicare claims for home healthcare services effective for new and modified revenue contracts beginning on or after January 1, 2020. Home health services contracts generally have one performance obligation to provide home health services to patients. Under the PDGM model, the Company recognizes revenue using the right to invoice practical expedient, an output method, as the contractual right to revenue corresponds directly with the transfer of services to the patient. Given the election of the practical expedient, the Company does not determine the transaction price or allocate any variable consideration at contract inception. Rather, the Company recognizes revenue commensurate with the amount to which it has the right to invoice the customer, which is a function of the average length of stay within each of the two 30 day payment periods. Payment is typically received from Medicare within 30 days after a claim is filed. Medicare is the most common third-party payor for home health services.

Home health revenue contracts may be modified to account for changes in the patient's plan of care. The Company identifies contract modifications when the modification changes the existing enforceable rights and obligations. As modifications to the plan of care modify the original performance obligation, the Company accounts for the contract modification as an adjustment to revenue (either as an increase in or a reduction of revenue) on a cumulative catch-up basis.

Hospice services contracts generally have one performance obligation to provide healthcare services to patients. The transaction price reflects the amount of revenue the Company expects to receive in exchange for providing these services. As the transaction price for healthcare services is known at the time of contract inception, no variable consideration exists. Hospice service revenue is recognized ratably over the period of care. The Company generally uses the time-elapsed method, an input measure as it best depicts the simultaneous delivery and consumption of healthcare services. Payment is received from third-party payors for hospice services within 60 days after a claim is filed, or in some cases in two installments, one during the contract and one after the services have been provided. Medicare is the most common third-party payor.

Other Revenue. The Company recognizes revenue associated with management services it provides to its affiliates. The Company accounts for the management services provided as one performance obligation and recognizes revenue over time as the services are delivered. The Company uses the right to invoice practical expedient, an output method, as the Company's right to revenue corresponds directly with the value delivered to the affiliate. As a result of the election to use the right to invoice practical expedient, the Company does not determine the transaction price or allocate any variable consideration at contract inception. Rather, the Company recognizes revenue commensurate with the amount to which it has the right to invoice the affiliate, which is based on contractually identified percentages. Payment is received monthly in arrears.

Automotive Revenue. The automotive subsidiary generates revenue primarily through the sale of new and used vehicles, the arrangement of vehicle financing, insurance and other service contracts (F&I revenue) and the performance of vehicle repair and maintenance services.

New and used vehicle revenue contracts generally contain one performance obligation to deliver the vehicle to the customer in exchange for the stated contract consideration. Revenue is recognized at the point in time when control of the vehicle passes to the customer. F&I revenue is recognized at the point in time when the agreement between the customer and financing, insurance or service provider is executed. As the automotive subsidiary acts as an agent in these F&I revenue transactions, revenue is recognized net of any financing, insurance and service provider costs. Repair and maintenance services revenue is recognized over time, as the service is performed.

Other Revenue. *Restaurant Revenue.* Restaurant revenues consist of sales generated by Clyde's Restaurant Group (CRG). Food and beverage revenue, net of discounts and taxes, is recognized at the point in time when it

is delivered to the customer. Proceeds from the sale of gift cards are recorded as deferred revenue and recognized as revenue upon redemption by the customer.

Custom Framing Services Revenue. Framebridge sells custom framing solutions to customers. Custom framing services revenue, net of discounts and taxes, is recognized when the products are delivered to the customer. Proceeds from the sale of gift cards are recorded as deferred revenue and recognized as revenue upon redemption by the customer.

Code3 Revenue. Code3 generates media management revenue in exchange for providing social media marketing solutions to its clients. The Company determined that Code3 contracts generally have one performance obligation made up of a series of promises to manage the client's media spend on advertising platforms for the duration of the contract period.

Code3 recognizes revenue, net of media acquisition costs, over time as media management services are delivered to the customer. Generally, Code3 recognizes revenue using the right to invoice practical expedient, an output method, as Code3's right to revenue corresponds directly with the value delivered to its customer. As a result of the election to use the right to invoice practical expedient, Code3 does not determine the transaction price or allocate any variable consideration at contract inception. Rather, Code3 recognizes revenue commensurate with the amount to which it has the right to invoice the customer which is a function of the cost of social media placement plus a management fee, less any applicable discounts. Payment is typically received within 100 days of revenue recognition.

Code3 evaluates whether it is the principal (i.e. presents revenue on a gross basis) or agent (i.e. presents revenue on a net basis) in its contracts. Code3 presents revenue for media management services, net of media acquisition costs, as an agent, as Code3 does not control the media before placement on social media platforms.

Leaf Group Revenue. Leaf Group (Leaf) generates revenue through its media and marketplace businesses. Media revenue is primarily derived from advertisements displayed on Leaf's online media properties. Revenue is recognized over time as the performance obligation is delivered. Revenue is generally recognized based on an output measure including impressions delivered, cost per click or time-based advertisements.

Marketplace revenue is primarily derived from the sale of products from Society6 and Saatchi Art Group. Each product ordered generally is accounted for as an individual performance obligation. Product revenue, net of discounts and taxes, is recognized when control of the promised good is transferred to the customer.

Other Revenue. Other revenue primarily includes advertising, circulation and subscription revenue from Slate, Decile, Pinna and Foreign Policy. The Company accounts for other advertising revenues consistently with the advertising revenue streams addressed above. Circulation revenue consists of fees that provide customers access to online and print publications. The Company recognizes circulation and subscription revenue ratably over the subscription period beginning on the date that the publication or product is made available to the customer. Circulation revenue contracts are generally annual or monthly subscription contracts that are paid in advance of delivery of performance obligations.

Revenue Policy Elections. The Company has elected to account for shipping and handling activities that occur after the customer has obtained control of the good as a fulfillment cost rather than as an additional promised service. Therefore, revenue for these performance obligations is recognized when control of the good transfers to the customer, which is when the good is ready for shipment. The Company accrues the related shipping and handling costs over the period when revenue is recognized.

The Company has elected to exclude from the measurement of the transaction price all taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by the entity from a customer.

Revenue Practical Expedients. The Company does not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less, (ii) contracts for which the amount of revenue recognized is based on the amount to which the Company has the right to invoice the customer for services performed, (iii) contracts for which the consideration received is a usage-based royalty promised in exchange for a license of intellectual property and (iv) contracts for which variable consideration is allocated entirely to a wholly unsatisfied promise to transfer a distinct good or service that forms part of a single performance obligation.

Costs to Obtain a Contract. The Company incurs costs to obtain a contract that are both incremental and expected to be recovered as the costs would not have been incurred if the contract was not obtained and the revenue from the contract exceeds the associated cost. The revenue guidance provides a practical expedient to expense sales commissions as incurred in instances where the amortization period is one year or less. The amortization period is defined in the guidance as the contract term, inclusive of any expected contract renewal periods. The Company has elected to apply this practical expedient to all contracts except for contracts in its education division. In the education division, costs to obtain a contract are amortized over the applicable amortization period except for cases in which commissions paid on initial contracts and renewals are commensurate. The Company amortizes these costs to obtain a contract on a straight-line basis over the amortization period. These expenses are included as cost of services or products in the Company's Consolidated Statements of Operations.

Leases. The Company has operating leases for substantially all of its educational facilities, corporate offices and other facilities used in conducting its business, as well as certain equipment. The Company determines if an arrangement is a lease at inception. Operating leases are included in lease right-of-use (ROU) assets, current portion of lease liabilities, and lease liabilities on the Company's Consolidated Balance Sheets. ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. ROU assets also include any initial direct costs, prepaid lease payments and lease incentives received, when applicable. As most of the Company's leases do not provide an implicit rate, the Company used its incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. The Company used the incremental borrowing rate on December 31, 2018 for operating leases that commenced prior to that date.

The Company's lease terms may include options to extend or terminate the lease by one to 10 years or more when it is reasonably certain that the option will be exercised. Leases with a term of twelve months or less are not recorded on the balance sheet; however, lease expense for these leases is recognized on a straight-line basis. The Company has elected the practical expedient to not separate lease components from nonlease components. As such, lease expense includes these nonlease components, when applicable. Fixed lease expense is recognized on a straight-line basis over the lease term. Variable lease expense is recognized when incurred. The Company's lease agreements do not contain any significant residual value guarantees or restrictive covenants. In some instances, the Company subleases its leased real estate facilities to third parties. The Company has several restaurant leases with an entity affiliated with some of CRG's senior managers.

Finance leases are included in property, plant and equipment, net, accounts payable and accrued liabilities and other liabilities on the Company's Consolidated Balance Sheets. The Company primarily has finance leases for its vehicle fleet at the healthcare subsidiary and service loaner vehicles at the automotive subsidiary. Service loaner vehicles are generally purchased from the lessor within six months of contract commencement and upon purchase the vehicles are placed into used vehicle inventory at cost. As of December 31, 2022 and 2021, the Company had $5.4 million and $4.0 million, respectively, in net, property, plant and equipment and current finance lease liabilities related to service loaner vehicles at the automotive subsidiary.

Pensions and Other Postretirement Benefits. The Company maintains various pension and incentive savings plans. Most of the Company's employees are covered by these plans. The Company also provides healthcare and

life insurance benefits to certain retired employees. These employees become eligible for benefits after meeting age and service requirements.

The Company recognizes the overfunded or underfunded status of a defined benefit postretirement plan as an asset or liability in its Consolidated Balance Sheets and recognizes changes in that funded status in the year in which the changes occur through comprehensive income. The Company measures changes in the funded status of its plans using the projected unit credit method and several actuarial assumptions, the most significant of which are the discount rate, the expected return on plan assets and the rate of compensation increase. The Company uses a measurement date of December 31 for its pension and other postretirement benefit plans.

Self-Insurance. The Company uses a combination of insurance and self-insurance for a number of risks, including claims related to employee healthcare and dental care, disability benefits, workers' compensation, general liability, property damage and business interruption. Liabilities associated with these plans are estimated based on, among other things, the Company's historical claims experience, severity factors and other actuarial assumptions. The expected loss accruals are based on estimates, and, while the Company believes that the amounts accrued are adequate, the ultimate loss may differ from the amounts provided.

Income Taxes. The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

The Company records net deferred tax assets to the extent that it believes these assets will more likely than not be realized. In making such determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations; this evaluation is made on an ongoing basis. In the event the Company were to determine that it was able to realize net deferred income tax assets in the future in excess of their net recorded amount, the Company would record an adjustment to the valuation allowance, which would reduce the provision for income taxes.

The Company recognizes a tax benefit from an uncertain tax position when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. The Company records a liability for the difference between the benefit recognized and measured for financial statement purposes and the tax position taken or expected to be taken on the Company's tax return. Changes in the estimate are recorded in the period in which such determination is made.

Foreign Currency Translation. Income and expense accounts of the Company's non-U.S. operations where the local currency is the functional currency are translated into U.S. dollars using the current rate method, whereby operating results are converted at the average rate of exchange for the period, and assets and liabilities are converted at the closing rates on the period end date. Gains and losses on translation of these accounts are accumulated and reported as a separate component of equity and other comprehensive income. Gains and losses on foreign currency transactions, including foreign currency denominated intercompany loans on entities with a functional currency in U.S. dollars, are recognized in the Consolidated Statements of Operations.

Equity-Based Compensation. The Company measures compensation expense for awards settled in shares based on the grant date fair value of the award. The Company measures compensation expense for awards settled in cash, or that may be settled in cash, based on the fair value at each reporting date. The Company recognizes the expense over the requisite service period, which is generally the vesting period of the award. Stock award forfeitures are accounted for as they occur.

Earnings Per Share. Basic earnings per share is calculated under the two-class method. The Company treats restricted stock as a participating security due to its nonforfeitable right to dividends. Under the two-class method, the Company allocates to the participating securities their portion of dividends declared and undistributed earnings to the extent the participating securities may share in the earnings as if all earnings for the period had been distributed. Basic earnings per share is calculated by dividing the income available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted earnings per share is calculated similarly except that the weighted average number of common shares outstanding during the period includes the dilutive effect of the assumed exercise of options and restricted stock issuable under the Company's stock plans. The dilutive effect of potentially dilutive securities is reflected in diluted earnings per share by application of the treasury stock method.

Mandatorily Redeemable Noncontrolling Interest. The mandatorily redeemable noncontrolling interest represents the ownership portion of a group of minority shareholders, consisting of a group of senior managers of the healthcare business, in subsidiaries of Graham Healthcare Group (GHG). The Company established GHC One LLC (GHC One) and GHC Two LLC (GHC Two) as vehicles to invest in a portfolio of healthcare businesses together with the group of senior managers of GHG. As the holder of preferred units, the Company is obligated to contribute 95% of the capital required for the acquisition of portfolio investments with the remaining 5% of the capital coming from the group of senior managers. The operating agreements of GHC One and GHC Two require the dissolution of the entities on March 31, 2026, and March 31, 2029, respectively, at which time the net assets will be distributed to its members. As a preferred unit holder, the Company will receive an amount up to its contributed capital plus a preferred annual return of 8% (guaranteed return) after the group of senior managers has received the redemption of their 5% interest in net assets (manager return). All distributions in excess of the manager and guaranteed return will be paid to common unit holders, which currently comprise the group of senior managers of GHG. The Company may convert its preferred units to common units at any time after which it will receive 80% of all distributions in excess of the manager return, with the remaining 20% of excess distributions going to the group of senior managers as holders of the other common units. The mandatorily redeemable noncontrolling interest is reported as a noncurrent liability at December 31, 2022 and 2021 in the Consolidated Balance Sheets. The Company presents this liability at fair value, which is computed quarterly at the current redemption value. Changes in the redemption value are recorded as interest expense or income in the Company's Consolidated Statement of Operations.

Redeemable Noncontrolling Interest. The Company's redeemable noncontrolling interest represents the noncontrolling interest in CSI Pharmacy Holding Company, LLC (CSI), which is 76.5% owned, Framebridge, which is 93.4% owned, Weiss, which is 50.1% owned and Skin Clique, which is 51% owned.

CSI's minority shareholders may put up to 50% of their shares to the Company. The first put period began in 2022. A second put period for another tranche of shares begins in 2024. In November 2022, a CSI minority shareholder put some shares to the Company, which had a redemption value of $1.2 million. Prior to the redemption, the Company owned 75% of CSI. The minority shareholder of Framebridge has an option to put 20% of the shares to the Company annually starting in 2024. The minority shareholder of Weiss has an option to put 10% of the shares to the Company annually starting in 2026 and may put all of the shares starting in 2033. The minority shareholders of Skin Clique have the option to put all or a portion of their shares to the Company starting in 2029 and ending in 2032. In March 2021, Hoover's minority shareholders put the remaining outstanding shares to the Company. Following the redemption, the Company owns 100% of Hoover. Prior to the redemption, the Company owned 98.01% of Hoover. The Company presents the redeemable noncontrolling interests at the greater of its carrying amount or redemption value at the end of each reporting period in the Consolidated Balance Sheets. Changes in the redemption value are recorded to capital in excess of par value in the Company's Consolidated Balance Sheets.

Comprehensive Income. Comprehensive income consists of net income, foreign currency translation adjustments, net changes in cash flow hedges, and pension and other postretirement plan adjustments.

Recently Adopted and Issued Accounting Pronouncements. New accounting pronouncements issued but not effective until after December 31, 2022, are not expected to have a material impact on the Company's Consolidated Financial Statements.

3. ACQUISITIONS AND DISPOSITIONS OF BUSINESSES

Acquisitions. During 2022, the Company acquired seven businesses: five in healthcare and two in automotive, for $143.2 million in cash and contingent consideration and the assumption of floor plan payables. The assets and liabilities of the companies acquired were recorded at their estimated fair values at the date of acquisition.

In August 2022, GHG acquired two small businesses which are included in healthcare.

In July 2022, GHG acquired a 100% interest in a multi-state provider of Applied Behavior Analysis clinics. The acquisition is expected to expand the product offerings of the healthcare division and is included in healthcare.

On July 5, 2022, the Company's automotive subsidiary acquired two automotive dealerships, including the real property for the dealership operations. In addition to a cash payment and the assumption of $10.9 million in floor plan payables, the automotive subsidiary borrowed $77.4 million to finance the acquisition. The dealerships are operated and managed by an entity affiliated with Christopher J. Ourisman, a member of the Ourisman Automotive Group family of dealerships. These acquisitions expand the Company's automotive business operations and are included in automotive.

In May 2022, GHG acquired two small businesses which are included in healthcare.

During 2021, the Company acquired six businesses: two in education, two in healthcare, one in automotive, and one in other businesses for $392.4 million in cash and contingent consideration and the assumption of floor plan payables. The assets and liabilities of the companies acquired were recorded at their estimated fair values at the date of the acquisition.

On June 14, 2021, the Company acquired all of the outstanding common shares of Leaf Group Ltd. for $308.6 million in cash and the assumption of $9.2 million in liabilities related to their previous stock compensation plan, which will be paid in the future. Leaf is a consumer internet company that builds creator-driven brands in lifestyle and home and art design categories. The acquisition is expected to provide benefits in the future by diversifying the Company's business operations and providing operating synergies with other business units. The Company includes Leaf in other businesses.

Kaplan acquired certain assets of Projects in Knowledge, a continuing medical education provider for healthcare professionals, and another small business in November 2021. These acquisitions are expected to build upon Kaplan's existing customer base in the medical and test preparation fields. Both businesses are included in Kaplan's supplemental education division.

In December 2021, GHG acquired two businesses, a home health business in Florida and a 50.1% interest in Weiss, a physician practice specializing in allergies, asthma and immunology. The minority shareholder of Weiss has an option to put 10% of the shares to the Company annually starting in 2026 and may put all of the shares starting in 2033. The fair value of the redeemable noncontrolling interest in Weiss was $6.6 million at the acquisition date, determined using an income approach. These acquisitions are expected to expand the market the healthcare division serves and are included in healthcare.

On December 28, 2021, the Company's automotive subsidiary acquired a Ford automotive dealership for cash and the assumption of $16.6 million in floor plan payables. In connection with the acquisition, the automotive subsidiary of the Company borrowed $22.5 million to finance the acquisition. The dealership is operated and managed by an entity affiliated with Christopher J. Ourisman, a member of the Ourisman Automotive Group family of dealerships. The acquisition expands the Company's automotive business operations and is included in automotive.

During 2020, the Company acquired three businesses: two in education and one in other businesses for $96.8 million in cash and contingent consideration. The assets and liabilities of the companies acquired were recorded at their estimated fair values at the date of acquisition.

In the first three months of 2020, Kaplan acquired two small businesses; one in its supplemental education division and one in its international division.

In May 2020, the Company acquired an additional interest in Framebridge, Inc. for cash and contingent consideration that resulted in the Company obtaining control of the investee. Following the acquisition, the Company owns 93.4% of Framebridge. The Company previously accounted for Framebridge under the equity method, and included it in Investments in Affiliates on the Consolidated Balance Sheet (see Note 4). The contingent consideration is primarily based on Framebridge achieving revenue milestones within a specific time period. The fair value of the contingent consideration at the acquisition date was $50.6 million, determined using a Monte Carlo simulation. The fair value of the redeemable noncontrolling interest in Framebridge was $6.0 million as of the acquisition date, determined using a market approach. The minority shareholder has an option to put 20% of the minority shares annually starting in 2024. The acquisition is expected to provide benefits in the future by diversifying the Company's business operations and is included in other businesses.

Acquisition-related costs for acquisitions that closed during 2022, 2021 and 2020 were $1.7 million, $3.0 million and $1.1 million, respectively, and were expensed as incurred. The aggregate purchase price of these acquisitions was allocated as follows, based on acquisition date fair values to the following assets and liabilities:

	Purchase Price Allocation		
	Year Ended December 31		
(in thousands)	**2022**	**2021**	**2020**
Accounts receivable	**$ 3,172**	$ 17,878	$ 745
Inventory	**21,278**	25,383	3,496
Property, plant and equipment	**36,255**	13,126	3,346
Lease right-of-use assets	**4,773**	25,890	6,580
Goodwill	**56,163**	204,151	73,951
Indefinite-lived intangible assets	**41,800**	22,200	–
Amortized intangible assets	**1,200**	99,800	14,589
Other assets	**481**	4,911	975
Deferred income taxes	**241**	44,975	15,958
Floor plan payables	**(10,908)**	(16,636)	–
Other liabilities	**(3,798)**	(52,567)	(14,917)
Current and noncurrent lease liabilities	**(5,865)**	(25,593)	(6,593)
Redeemable noncontrolling interest	**(2,164)**	(6,616)	(6,005)
Noncontrolling interest	**(512)**	–	–
Aggregate purchase price, net of cash acquired	**$142,116**	$356,902	$ 92,125

The 2022 fair values recorded were based upon valuations and the estimates and assumptions used in such valuations are subject to change within the measurement period (up to one year from the acquisition date). The recording of deferred tax assets or liabilities and the final amount of residual goodwill is not yet finalized. The 2021 fair values include measurement period adjustments related to accounts receivable, goodwill, amortized intangible assets, current and noncurrent lease liabilities, deferred income taxes and contingent consideration. Goodwill is calculated as the excess of the consideration transferred over the net assets recognized and represents the estimated future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. The goodwill recorded due to these acquisitions is attributable to the assembled workforces of the acquired companies and expected synergies. The Company expects to deduct $38.5 million, $80.6 million and $3.2 million of goodwill for income tax purposes for the acquisitions completed in 2022, 2021 and 2020, respectively.

The acquired companies were consolidated into the Company's financial statements starting on their respective acquisition dates. The Company's Consolidated Statements of Operations include aggregate revenue and operating income of $153.8 million and $6.3 million, respectively, for the year ended December 31, 2022. The following unaudited pro forma financial information presents the Company's results as if the current year acquisitions had occurred at the beginning of 2021. The unaudited pro forma information also includes the 2021 acquisitions as if they occurred at the beginning of 2020 and the 2020 acquisitions as if they had occurred at the beginning of 2019:

	Year Ended December 31		
(in thousands)	**2022**	**2021**	**2020**
Operating revenues	**$4,090,272**	$3,827,486	$3,323,427
Net income	**81,373**	376,478	279,810

These pro forma results were based on estimates and assumptions, which the Company believes are reasonable, and include the historical results of operations of the acquired companies and adjustments for depreciation and amortization of identified assets and the effect of pre-acquisition transaction related expenses incurred by the Company and the acquired entities. The pro forma information does not include efficiencies, cost reductions and synergies expected to result from the acquisitions. They are not the results that would have been realized had these entities been part of the Company during the periods presented and are not necessarily indicative of the Company's consolidated results of operations in future periods.

Disposition of Businesses. In October 2022, the Company entered into an agreement to merge the CyberVista business with CyberWire, Inc. in return for a noncontrolling financial interest in the merged entity, N2K Networks, Inc. (the CyberVista transaction). The Company deconsolidated the CyberVista subsidiary, which was included in other businesses, and accounts for its continuing interest in N2K Networks under the equity method of accounting (see Note 4). In December 2020, the Company completed the sale of Megaphone which was included in other businesses. As a result of these transactions, the Company reported gains in other non-operating income (see Note 16).

Other Transactions. In November 2022, a CSI minority shareholder put some shares to the Company, which had a redemption value of $1.2 million. Following the redemption, the Company owns 76.5% of CSI. In March 2021, Hoover's minority shareholders put the remaining outstanding shares to the Company, which had a redemption value of $3.5 million. Following the redemption, the Company owns 100% of Hoover.

As of December 31, 2022, the Company holds a controlling financial interest in GHC One and GHC Two and therefore includes the assets, liabilities, results of operations and cash flows in its consolidated financial statements. GHC One acquired CSI and another small business during 2019. GHC Two acquired Weiss during 2021 and a provider of Applied Behavior Analysis clinics and another small business in 2022. The Company accounts for the minority ownership of the group of senior managers in GHC One and GHC Two as a mandatorily redeemable noncontrolling interest (see Note 2).

4. INVESTMENTS

Money Market Investments. As of December 31, 2022, the Company had money market investments of $7.7 million that are classified as cash and cash equivalents in the Company's Consolidated Balance Sheets. The Company had no money market investments as of December 31, 2021.

Investments in Marketable Equity Securities. Investments in marketable equity securities consist of the following:

(in thousands)	As of December 31 2022	2021
Total cost	**$270,764**	$273,201
Gross unrealized gains	**363,147**	537,915
Gross unrealized losses	**(23,990)**	(1,119)
Total Fair Value	**$609,921**	$809,997

At December 31, 2022 and 2021, the Company owned 55,430 and 44,430 shares, respectively, in Markel Corporation (Markel) valued at $73.0 million and $54.8 million, respectively. The Chief Executive Officer of Markel, Mr. Thomas S. Gayner, is a member of the Company's Board of Directors. As of December 31, 2022, the Company owned 422 Class A and 482,945 Class B shares in Berkshire Hathaway valued at $347.0 million, which exceeded 5% of the Company's total assets.

The Company purchased $42.1 million, of which $1.5 million was settled in January 2023, $48.0 million and $20.0 million of marketable equity securities during 2022, 2021 and 2020, respectively.

During 2022, 2021 and 2020, the gross cumulative realized net gains from the sales of marketable equity securities were $58.1 million, $46.0 million and $23.0 million, respectively. The total proceeds from such sales were $102.0 million, $65.5 million and $93.8 million, respectively.

The net (loss) gain on marketable equity securities comprised the following:

(in thousands)	Year Ended December 31 2022	2021	2020
(Loss) gain on marketable equity securities, net	**$(139,589)**	$243,088	$60,787
Less: Net losses (gains) in earnings from marketable equity securities sold and donated	**27,786**	(17,830)	13,382
Net unrealized (losses) gains in earnings from marketable equity securities still held at the end of the year	**$(111,803)**	$225,258	$74,169

Investments in Affiliates. As of December 31, 2022, the Company held a 49.9% interest in N2K Networks on a fully diluted basis, and accounts for its investment under the equity method. The Company holds two of the five seats of N2K Networks' governing board with the other shareholders retaining substantive participation rights to control the financial and operating decisions of N2K Networks through their representation on the board.

As of December 31, 2022, the Company held an approximate 12% interest in Intersection Holdings, LLC (Intersection), and accounts for its investment under the equity method. The Company holds two of the ten seats of Intersection's governing board, which allows the Company to exercise significant influence over Intersection.

As of December 31, 2022, the Company also held investments in several other affiliates; GHG held a 40% interest in Residential Home Health Illinois, a 40% interest in Residential Hospice Illinois, a 40% interest in the joint venture formed between GHG and a Michigan hospital, and a 40% interest in the joint venture formed between GHG and Allegheny Health Network (AHN). During the first quarter of 2022, GHG invested an additional $18.5 million in the Residential Home Health Illinois and Residential Hospice Illinois affiliates to fund their acquisition of certain home health and hospice assets of the NorthShore University HealthSystem. The transaction diluted GHG's interest in Residential Hospice Illinois resulting in a $0.6 million gain on sale of

investment in affiliate (see Note 16). For the years ended December 31, 2022, 2021 and 2020, GHG recorded $13.9 million, $10.9 million and $9.6 million, respectively, in revenue for services provided to its affiliates.

The Company had $49.1 million and $52.5 million in its investment account that represents cumulative undistributed income in its investments in affiliates as of December 31, 2022 and 2021, respectively.

In the third quarter of 2021, the Company recorded an impairment charge of $6.6 million on one of its investments in affiliates as a result of the challenging economic environment for this business following an announcement by the Chinese government to reform the education sector for private education companies. In the first quarter of 2020, the Company recorded impairment charges of $3.6 million on two of its investments in affiliates as a result of the challenging economic environment for these businesses, of which $2.7 million related to the Company's investment in Framebridge.

In May 2020, the Company made an additional investment in Framebridge (see Note 3) that resulted in the Company obtaining control of the investee. The results of operations, cash flows, assets and liabilities of Framebridge are included in the consolidated financial statements of the Company from the date of the acquisition. Timothy J. O'Shaughnessy, President and Chief Executive Officer of Graham Holdings Company, was a personal investor in Framebridge and served as Chairman of the Board prior to the acquisition of the additional interest. The Company acquired Mr. O'Shaughnessy's interest under the same terms as the other Framebridge investors.

Additionally, Kaplan International Holdings Limited (KIHL) held a 45% interest in a joint venture formed with University of York. KIHL loaned the joint venture £22 million, which loan is repayable over 25 years at an interest rate of 7% and guaranteed by the University of York. The outstanding balance on this loan was £20.4 million as of December 31, 2022. The loan is repayable by December 2041.

Summarized Financial Data of Nonconsolidated Affiliates. The Company's investments in affiliates consists of investments in private equity funds and other operating entities that it does not control, but over which it exerts significant influence. The following tables present summarized financial data for the Company's nonconsolidated affiliates. The amounts included in the tables below present 100% of the balance sheets and the results of operations of such nonconsolidated affiliates accounted for under the equity method.

The Company's ownership in private equity fund partnerships varies between approximately 4% and 10%; the Company's related investment balance included in Investments in Affiliates was $68.9 million and $72.8 million as of December 31, 2022 and 2021, respectively.

The summarized balance sheet data of the private equity fund investments consists of the following:

	As of December 31	
(in thousands)	**2022**	**2021**
Investments in securities, at estimated fair value	**$1,974,189**	$2,039,368
Other current assets	**19,072**	28,590
Total assets	**$1,993,261**	$2,067,958
Total liabilities	**$ 3,945**	$ 4,790
Total partners' capital	**1,989,316**	2,063,168
Total liabilities and partners' capital	**$1,993,261**	$2,067,958

The summarized operating data of the private equity fund investments was as follows:

(in thousands)	Year Ended December 31 2022	2021	2020
Net investment loss	**$ (14,129)**	$ (13,324)	$ (15,301)
Net realized gain on investments	**162,644**	190,368	440
Net change in unrealized (depreciation) appreciation on investments	**(66,333)**	1,043,627	525,588
Increase in net assets from operations	**$ 82,182**	$1,220,671	$510,727

The summarized balance sheet data of the operating entity investments consists of the following:

(in thousands)	As of December 31 2022	2021
Current assets	**$174,027**	$203,274
Noncurrent assets	**542,625**	569,505
Total assets	**$716,652**	$772,779
Current liabilities	**$126,365**	$219,220
Noncurrent liabilities	**386,425**	329,965
Total liabilities	**$512,790**	$549,185
Noncontrolling interests	**$ (26,593)**	$ (80,604)

The summarized operating data of the operating entity investments was as follows:

(in thousands)	Year Ended December 31 2022	2021	2020
Net sales	**$459,949**	$358,928	$ 312,194
Gross profit	**196,481**	146,312	11,217
Net income (loss)	**3,206**	135,241	(206,504)
Net income (loss) attributable to the entity	**5,124**	102,829	(148,394)

Cost Method Investments. The Company held investments without readily determinable fair values in a number of equity securities that are accounted for as cost method investments, which are recorded at cost, less impairment, and adjusted for observable price changes for identical or similar investments of the same issuer. The carrying value of these investments was $66.7 million and $48.9 million as of December 31, 2022 and 2021, respectively. During the years ended December 31, 2022, 2021 and 2020, the Company recorded gains of $6.9 million, $11.8 million and $4.2 million, respectively, to those equity securities based on observable transactions. For the years ended December 31, 2022 and 2020, the Company recorded impairment losses of $1.3 million and $7.3 million, respectively, to those securities.

5. ACCOUNTS RECEIVABLE, ACCOUNTS PAYABLE AND ACCRUED LIABILITIES

Accounts receivable consist of the following:

(in thousands)	As of December 31 2022	2021
Receivables from contracts with customers, less estimated credit losses of $21,387 and $21,836	**$533,622**	$589,582
Other receivables	**27,157**	17,889
	$560,779	$607,471

The changes in estimated credit losses were as follows:

(in thousands)	Balance at Beginning of Period	Additions – Charged to Costs and Expenses	Deductions	Balance at End of Period
2022	**$21,836**	**$ 2,958**	**$(3,407)**	**$21,387**
2021	21,494	6,824	(6,482)	21,836
2020	14,276	10,667	(3,449)	21,494

Accounts payable and accrued liabilities consist of the following:

(in thousands)	As of December 31	
	2022	2021
Accounts payable	**$136,186**	$126,985
Accrued compensation and related benefits	**149,823**	179,307
Other accrued liabilities	**276,996**	277,337
	$563,005	$583,629

Cash overdrafts of $0.5 million and $5.5 million are included in accounts payable and accrued liabilities at December 31, 2022 and 2021, respectively.

6. INVENTORIES, CONTRACTS IN PROGRESS AND VEHICLE FLOOR PLAN PAYABLE

Inventories and contracts in progress consist of the following:

(in thousands)	As of December 31	
	2022	**2021**
Raw materials	**$ 68,494**	$ 54,944
Work-in-process	**15,718**	11,506
Finished goods	**140,548**	72,796
Contracts in progress	**2,051**	2,225
	$226,811	$141,471

The Company finances new, used and service loaner vehicle inventory through standardized floor plan facilities with Truist Bank (Truist floor plan facility) and Ford Motor Credit Company (Ford floor plan facility). At December 31, 2022, the floor plan facilities bore interest at variable rates that are based on Secure Overnight Financing Rate (SOFR) and prime-based interest rates. On July 5, 2022, the Company entered into an amended agreement with Truist to increase the capacity under the Truist floor plan facility to $80.0 million. The weighted average interest rate for the floor plan facilities was 3.2%, 1.1% and 1.7% for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022, the aggregate capacity under the floor plan facilities was $106.3 million, of which $69.8 million had been utilized, and is included in accounts payable and accrued liabilities in the Consolidated Balance Sheet. Changes in the vehicle floor plan payable are reported as cash flows from financing activities in the Consolidated Statements of Cash Flows.

The floor plan facilities are collateralized by vehicle inventory and other assets of the relevant dealership subsidiary, and contains a number of covenants, including, among others, covenants restricting the dealership subsidiary with respect to the creation of liens and changes in ownership, officers and key management personnel. The Company was in compliance with all of these restrictive covenants as of December 31, 2022.

The floor plan interest expense related to the vehicle floor plan arrangements is offset by amounts received from manufacturers in the form of floor plan assistance capitalized in inventory and recorded against cost of goods

sold in the Consolidated Statements of Operations when the associated inventory is sold. For the years ended December 31, 2022, 2021 and 2020, the Company recognized a reduction in cost of goods sold of $4.6 million, $2.7 million and $2.1 million, respectively, related to manufacturer floor plan assistance.

7. PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consist of the following:

(in thousands)	As of December 31 2022	As of December 31 2021
Land	**$ 86,892**	$ 73,651
Buildings	**203,256**	211,758
Machinery, equipment and fixtures	**457,145**	419,778
Leasehold improvements	**226,967**	215,640
Construction in progress	**35,150**	19,517
	1,009,410	940,344
Less accumulated depreciation	**(506,410)**	(472,218)
	$ 503,000	$ 468,126

Depreciation expense was $73.3 million, $71.4 million, and $74.3 million in 2022, 2021 and 2020, respectively.

The Company recorded property, plant and equipment impairment charges of $2.4 million and $2.3 million in 2021 and 2020, respectively. The Company estimated the fair value of the property, plant and equipment using income and market approaches.

8. LEASES

Operating Leases. The components of operating lease expense were as follows:

(in thousands)	Year Ended December 31 2022	2021	2020
Operating lease cost	**$ 91,613**	$ 96,078	$113,669
Short-term and month-to-month lease cost	**30,754**	17,724	21,862
Variable lease cost	**21,265**	20,889	18,718
Sublease income	**(14,734)**	(16,918)	(18,508)
Total net lease cost	**$128,898**	$117,773	$135,741

The Company recorded impairment charges of $3.9 million and $11.4 million in 2021 and 2020, respectively. The Company estimated the fair value of the right-of-use assets using an income approach.

Supplemental information related to operating leases was as follows:

(in thousands)	Year Ended December 31 2022	2021	2020
Cash Flow Information:			
Operating cash flows from operating leases (payments)	**$100,207**	$105,164	$113,664
Right-of-use assets obtained in exchange for new operating lease liabilities (noncash)	**81,838**	59,409	27,031

	As of December 31 2022	2021
Balance Sheet Information:		
Lease right-of-use assets	**$429,403**	$437,969
Current lease liabilities	**$ 70,007**	$ 77,655
Noncurrent lease liabilities	**393,626**	405,200
Total lease liabilities	**$463,633**	$482,855
Weighted average remaining lease term (years)	**10.7**	10.6
Weighted average discount rate	**4.9%**	4.6%

At December 31, 2022, maturities of operating lease liabilities were as follows:

(in thousands)	December 31, 2022
2023	$ 90,564
2024	77,138
2025	60,960
2026	53,709
2027	48,522
Thereafter	286,561
Total payments	**617,454**
Less: Imputed interest	(153,821)
Total	**$ 463,633**

As of December 31, 2022, the Company has entered into operating leases, including educational and other facilities, that have not yet commenced that have minimum lease payments of $6.3 million. These operating leases will commence in fiscal year 2023 with lease terms of 3 to 11 years.

Finance Leases. The components of financing lease expense were as follows:

(in thousands)	Year Ended December 31, 2022
Finance lease cost:	
Amortization of right-of-use assets	**$2,351**
Interest on lease liabilities	**317**
Finance lease cost	**2,668**
Variable lease cost	**85**
Total net lease cost	**$2,753**

Supplemental information related to finance leases was as follows:

(in thousands)	Year Ended December 31, 2022
Cash Flow Information:	
Operating cash flows from finance leases	**$ 317**
Financing cash flows from finance leases (payments)	**6,237**
Right-of-use assets obtained in exchange for new finance lease liabilities (noncash)	**9,182**

	As of December 31, 2022
Balance Sheet Information:	
Property, plant and equipment, net	**$13,835**
Current lease liabilities	**8,697**
Noncurrent lease liabilities	**5,362**
Total lease liabilities	**$14,059**
Weighted average remaining lease term (years)	**2.0**
Weighted average discount rate	**4.6%**

At December 31, 2022, maturities of finance lease liabilities were as follows:

(in thousands)	December 31, 2022
2023	$ 9,034
2024	3,590
2025	1,990
Total payments	**14,614**
Less: Imputed interest	(555)
Total	**$14,059**

9. GOODWILL AND OTHER INTANGIBLE ASSETS

In the fourth quarter of 2022, as a result of the weakened current outlook for digital advertising and consumer demand for art and related goods following substantial declines in revenues and significant operating losses at Leaf, the Company recorded goodwill and amortized intangible asset impairment charges of $129.0 million at the Leaf Media and Leaf Marketplace reporting units. The Company estimated the fair value of the reporting units and amortized intangible assets by utilizing a discounted cash flow model. The carrying values of the reporting units and amortized intangible assets exceeded their estimated fair values, resulting in goodwill and intangible asset impairment charges for the amount by which the carrying values exceeded their estimated fair values after taking into account the effect of deferred income taxes. Leaf is included in other businesses.

In the third quarter of 2021, as a result of the emergence of the COVID-19 Delta variant and continued weak product demand in the commercial office electrical products and hospitality sectors caused by the COVID-19 pandemic, the Company performed an interim review of the goodwill and indefinite-lived intangibles of the Dekko reporting unit. As a result of the impairment review, the Company recorded a $26.7 million goodwill impairment charge. The Company estimated the fair value of the reporting unit by utilizing a discounted cash flow model. The carrying value of the reporting unit exceeded the estimated fair value, resulting in a goodwill impairment charge for the amount by which the carrying value exceeded the estimated fair value after taking into account the effect of deferred income taxes. Dekko is included in manufacturing.

In the first quarter of 2020, as a result of the uncertainty and challenging operating environment created by the COVID-19 pandemic, the Company performed an interim review of the goodwill, indefinite-lived intangibles and other long-lived assets of the CRG and automotive dealership reporting units and asset groups. As a result of the impairment reviews, the Company recorded a $9.7 million goodwill and indefinite-lived intangible asset impairment charge at CRG and a $6.7 million indefinite-lived intangible asset impairment charge at the auto dealerships. The Company estimated the fair value of the reporting units and indefinite-lived intangible assets by utilizing a discounted cash flow model. The carrying value of the CRG reporting unit and the indefinite-lived intangible assets exceeded the estimated fair value, resulting in a goodwill and indefinite-lived intangible asset impairment charge for the amount by which the carrying value exceeded the estimated fair value. CRG is included in other businesses and the automotive dealerships are included in automotive.

Amortization of intangible assets for the years ended December 31, 2022, 2021 and 2020, was $58.9 million, $57.9 million and $56.8 million, respectively. Amortization of intangible assets is estimated to be approximately $50 million in 2023, $37 million in 2024, $29 million in 2025, $20 million in 2026, $6 million in 2027 and $19 million thereafter.

The changes in the carrying amount of goodwill, by segment, were as follows:

(in thousands)	Education	Television Broadcasting	Manufacturing	Healthcare	Automotive	Other Businesses	Total
As of December 31, 2020							
Goodwill	$1,183,379	$190,815	$234,993	$98,421	$39,121	$91,351	$1,838,080
Accumulated impairment losses	(331,151)	–	(7,616)	–	–	(14,563)	(353,330)
	852,228	190,815	227,377	98,421	39,121	76,788	1,484,750
Acquisitions	16,342	–	–	19,908	6,705	162,048	205,003
Impairment	–	–	(26,686)	–	–	–	(26,686)
Foreign currency exchange rate changes	(13,485)	–	–	–	–	–	(13,485)
As of December 31, 2021							
Goodwill	1,186,236	190,815	234,993	118,329	45,826	253,399	2,029,598
Accumulated impairment losses	(331,151)	–	(34,302)	–	–	(14,563)	(380,016)
	855,085	190,815	200,691	118,329	45,826	238,836	1,649,582
Measurement period adjustment	**1,081**	**–**	**–**	**249**	**–**	**(2,183)**	**(853)**
Acquisitions	**–**	**–**	**–**	**17,292**	**38,871**	**–**	**56,163**
Impairment	**–**	**–**	**–**	**–**	**–**	**(102,124)**	**(102,124)**
Foreign currency exchange rate changes	**(41,815)**	**–**	**–**	**–**	**–**	**–**	**(41,815)**
As of December 31, 2022							
Goodwill	**1,145,502**	**190,815**	**234,993**	**135,870**	**84,697**	**251,216**	**2,043,093**
Accumulated impairment losses	**(331,151)**	**–**	**(34,302)**	**–**	**–**	**(116,687)**	**(482,140)**
	$ 814,351	**$190,815**	**$200,691**	**$135,870**	**$84,697**	**$134,529**	**$1,560,953**

The changes in carrying amount of goodwill at the Company's education division were as follows:

(in thousands)	Kaplan International	Higher Education	Supplemental Education	Total
As of December 31, 2020				
Goodwill	$634,749	$ 174,564	$ 374,066	$1,183,379
Accumulated impairment losses	–	(111,324)	(219,827)	(331,151)
	634,749	63,240	154,239	852,228
Acquisitions	–	–	16,342	16,342
Foreign currency exchange rate changes	(13,481)	–	(4)	(13,485)
As of December 31, 2021				
Goodwill	621,268	174,564	390,404	1,186,236
Accumulated impairment losses	–	(111,324)	(219,827)	(331,151)
	621,268	63,240	170,577	855,085
Measurement period adjustment	**–**	**–**	**1,081**	**1,081**
Foreign currency exchange rate changes	**(41,707)**	**–**	**(108)**	**(41,815)**
As of December 31, 2022				
Goodwill	**579,561**	**174,564**	**391,377**	**1,145,502**
Accumulated impairment losses	**–**	**(111,324)**	**(219,827)**	**(331,151)**
	$579,561	**$ 63,240**	**$ 171,550**	**$ 814,351**

Other intangible assets consist of the following:

		As of December 31, 2022			As of December 31, 2021		
(in thousands)	Useful Life Range	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Amortized Intangible Assets							
Student and customer relationships	**2–10 years**	**$297,766**	**$230,429**	**$ 67,337**	$300,027	$206,714	$ 93,313
Trade names and trademarks	**2–15 years**	**148,102**	**81,078**	**67,024**	158,365	68,113	90,252
Network affiliation agreements	**10 years**	**17,400**	**10,367**	**7,033**	17,400	8,628	8,772
Databases and technology	**3–6 years**	**36,216**	**32,219**	**3,997**	36,585	26,464	10,121
Noncompete agreements	**2–5 years**	**1,000**	**995**	**5**	1,000	991	9
Other	**1–8 years**	**43,644**	**27,618**	**16,026**	68,500	23,847	44,653
		$544,128	**$382,706**	**$161,422**	$581,877	$334,757	$247,120
Indefinite-Lived Intangible Assets							
Franchise agreements		**$ 85,858**			$ 44,058		
Trade names and trademarks		**81,905**			86,972		
FCC licenses		**11,000**			11,000		
Licensure and accreditation		**150**			150		
Other		**21**			–		
		$178,934			$142,180		

10. INCOME TAXES

Income before income taxes consists of the following:

(in thousands)	Year Ended December 31		
	2022	2021	2020
U.S.	**$ 69,499**	$421,420	$403,295
Non-U.S.	**52,235**	28,207	3,973
	$121,734	$449,627	$407,268

The provision for income taxes consists of the following:

(in thousands)	Current	Deferred	Total
Year Ended December 31, 2022			
U.S. Federal	**$37,525**	**$ (6,180)**	**$ 31,345**
State and Local	**5,676**	**2,513**	**8,189**
Non-U.S.	**11,943**	**(177)**	**11,766**
	$55,144	**$ (3,844)**	**$ 51,300**
Year Ended December 31, 2021			
U.S. Federal	$20,806	$64,356	$ 85,162
State and Local	4,354	(435)	3,919
Non-U.S.	6,094	1,125	7,219
	$31,254	$65,046	$ 96,300
Year Ended December 31, 2020			
U.S. Federal	$77,882	$ 6,669	$ 84,551
State and Local	8,083	4,954	13,037
Non-U.S.	6,958	2,754	9,712
	$92,923	$14,377	$107,300

The provision for income taxes differs from the amount of income tax determined by applying the U.S. Federal statutory rate of 21% to the income before taxes as a result of the following:

(in thousands)	Year Ended December 31		
	2022	2021	2020
U.S. Federal taxes at statutory rate (see above)	**$25,564**	$94,422	$ 85,526
State and local taxes, net of U.S. Federal tax	**(331)**	2,238	15,366
Valuation allowances against state tax benefits, net of U.S. Federal tax	**6,800**	859	(5,067)
Stock-based compensation	**2**	(24)	2,048
Valuation allowances against other non-U.S. income tax benefits	**263**	4,042	2,445
Goodwill impairments	**15,628**	1,612	–
Other, net	**3,374**	(6,849)	6,982
Provision for Income Taxes	**$51,300**	$96,300	$107,300

The Company's effective tax rate for 2021 was favorably impacted by a $17.2 million deferred tax adjustment arising from a change in the estimated deferred state income tax rate attributable to the apportionment formula used in the calculation of deferred taxes related to the Company's pension and other postretirement plans. This benefit is included in the overall state tax provision for 2021 of $2.2 million reflected above.

Deferred income taxes consist of the following:

(in thousands)	As of December 31 2022	2021
Employee benefit obligations	**$ 53,307**	$ 64,258
Accounts receivable	**3,770**	3,554
State income tax loss carryforwards	**61,826**	63,050
State capital loss carryforwards	**36**	107
State income tax credit carryforwards	**421**	511
U.S. Federal income tax loss carryforwards	**64,310**	69,509
U.S. Federal foreign income tax credit carryforwards	**1,271**	970
Non-U.S. income tax loss carryforwards	**19,937**	18,877
Non-U.S. capital loss carryforwards	**3,458**	3,707
Leases	**59,072**	63,715
Other	**2,350**	6,396
Deferred Tax Assets	**269,758**	294,654
Valuation allowances	**(62,816)**	(57,603)
Deferred Tax Assets, Net	**206,942**	237,051
Prepaid pension cost	**426,348**	594,372
Unrealized gain on marketable equity securities	**87,204**	138,868
Goodwill and other intangible assets	**81,593**	103,497
Property, plant and equipment	**19,703**	15,451
Leases	**49,473**	51,668
Non-U.S. withholding tax	**2,084**	2,001
Deferred Tax Liabilities	**666,405**	905,857
Deferred Income Tax Liabilities, Net	**$459,463**	$668,806

The Company has $1,049.7 million of state income tax net operating loss carryforwards available to offset future state taxable income. During 2021, the Company recorded $115.4 million of state income tax loss carryforwards as a result of the Leaf acquisition. State income tax loss carryforwards, if unutilized, will start to expire approximately as follows:

(in millions)	
2023	$ 5.4
2024	7.2
2025	18.1
2026	13.7
2027	17.6
2028 and after	987.7
Total	**$1,049.7**

The Company has recorded at December 31, 2022, $61.8 million in deferred state income tax assets, net of U.S. Federal income tax, with respect to these state income tax loss carryforwards. The Company has established $41.6 million in valuation allowances against these deferred state income tax assets, since the Company has determined that it is more likely than not that some of these state tax losses may not be fully utilized in the future to reduce state taxable income.

The Company has $306.2 million of U.S. Federal income tax loss carryforwards obtained as a result of prior stock acquisitions. During 2021, the Company recorded $262.5 million of U.S. Federal income tax loss carryforwards as a result of the Leaf acquisition. U.S. Federal income tax loss carryforwards are expected to be fully utilized as follows:

(in millions)	
2023	$ 27.8
2024	27.8
2025	24.8
2026	14.0
2027	6.6
2028 and after	205.2
Total	**$306.2**

The Company has established at December 31, 2022, $64.3 million in U.S. Federal deferred tax assets with respect to these U.S. Federal income tax loss carryforwards.

For U.S. Federal income tax purposes, the Company has established U.S. Federal deferred tax assets with respect to $1.3 million of foreign tax credits available to be credited against future U.S. Federal income tax liabilities that will start to expire in 2023 if unutilized. The Company has recorded $1.3 million in valuation allowances against these deferred tax assets since the Company determined that it is more likely than not these foreign tax credit carryforwards may not be utilized in the future to reduce U.S. Federal income taxes.

The Company has $91.1 million of non-U.S. income tax loss carryforwards as a result of operating losses and carryforwards that were obtained in part through prior stock acquisitions that are available to offset future non-U.S. taxable income and has recorded, with respect to these losses, $19.9 million in non-U.S. deferred income tax assets. The Company has established $14.4 million in valuation allowances against the deferred tax assets for the portion of non-U.S. tax losses that may not be utilized to reduce future non-U.S. taxable income. The $91.1 million of non-U.S. income tax loss carryforwards consist of $50.7 million in losses that may be carried forward indefinitely; $26.0 million of losses that, if unutilized, will expire in varying amounts through 2027; and $14.4 million of losses that, if unutilized, will start to expire after 2027.

The Company has $11.5 million of non-U.S. capital loss carryforwards that may be carried forward indefinitely and are available to offset future non-U.S. capital gains. The Company recorded a $3.5 million non-U.S. deferred income tax asset for these non-U.S. capital loss carryforwards and has established a full valuation allowance against this non-U.S. deferred tax asset since the Company has determined that it is more likely than not that the capital loss carryforwards may not be utilized to reduce taxable income in the future.

Deferred tax valuation allowances and changes in deferred tax valuation allowances were as follows:

(in thousands)	Balance at Beginning of Period	Tax Expense and Revaluation	Deductions	Balance at End of Period
Year Ended				
December 31, 2022	**$57,603**	**$ 7,460**	**$(2,247)**	**$62,816**
December 31, 2021	47,217	13,915	(3,529)	57,603
December 31, 2020	46,243	7,303	(6,329)	47,217

The Company has established $43.2 million in valuation allowances against deferred state tax assets recognized, net of U.S. Federal tax. As stated above, approximately $41.6 million of the valuation allowances, net of U.S. Federal income tax, relate to state income tax loss carryforwards. In most instances, the Company has established

valuation allowances against deferred state income tax assets without considering potentially offsetting deferred tax liabilities established with respect to prepaid pension cost and goodwill. Prepaid pension cost and goodwill have not been considered a source of future taxable income for realizing those deferred state tax assets recognized since these temporary differences are not likely to reverse in the foreseeable future. However, certain deferred state tax assets have an indefinite life. As a result, the Company has considered deferred tax liabilities for prepaid pension cost and goodwill as a source of future taxable income for realizing those deferred state tax assets with indefinite lives. The valuation allowances established against deferred state income tax assets may increase or decrease within the next 12 months, based on operating results or the market value of investment holdings. The Company will monitor future results on a quarterly basis to determine whether the valuation allowances provided against deferred state tax assets should be increased or decreased as future circumstances warrant.

The Company has established $18.2 million in valuation allowances against non-U.S. deferred tax assets, and, as stated above, $14.4 million of the non-U.S. valuation allowances relate to non-U.S. income tax loss carryforwards and $3.5 million relate to non-U.S. capital loss carryforwards. Valuation allowances established against non-U.S. deferred tax assets are recorded at the education division and other businesses. These non-U.S. valuation allowances may increase or decrease within the next 12 months, based on operating results. As a result, the Company is unable to estimate the potential tax impact, given the uncertain operating environment. The Company will monitor future education division and other businesses' operating results and projected future operating results on a quarterly basis to determine whether the valuation allowances provided against non-U.S. deferred tax assets should be increased or decreased as future circumstances warrant.

The Company estimates that unremitted non-U.S. subsidiary earnings, when distributed, will not be subject to tax except to the extent non-U.S. withholding taxes are imposed. Approximately $2.1 million of deferred tax liabilities remain recorded on the books at December 31, 2022 with respect to future non-U.S. withholding taxes the Company estimated may be imposed on future cash distributions.

U.S. Federal and state tax liabilities may be recorded if the investment in non-U.S. subsidiaries become held for sale instead of being held indefinitely, but calculation of the tax due is not practicable.

The 2019 U.S. Federal tax return and subsequent years remain open to IRS examination. The Company files income tax returns with the U.S. Federal government and in various state, local and non-U.S. governmental jurisdictions, with the consolidated U.S. Federal tax return filing considered the only major tax jurisdiction.

The Company endeavors to comply with tax laws and regulations where it does business, but cannot guarantee that, if challenged, the Company's interpretation of all relevant tax laws and regulations will prevail and that all tax benefits recorded in the financial statements will ultimately be recognized in full.

The following summarizes the Company's unrecognized tax benefits, excluding interest and penalties, for the respective periods:

	Year Ended December 31		
(in thousands)	**2022**	**2021**	**2020**
Beginning unrecognized tax benefits	**$3,004**	$1,898	$ 1,572
Increases related to current year tax positions	**300**	1,061	742
Increases related to prior year tax positions	**778**	45	656
Decreases related to prior year tax positions	**(185)**	–	–
Decreases related to settlement with tax authorities	**–**	–	(1,072)
Decreases due to lapse of applicable statutes of limitations	**–**	–	–
Ending unrecognized tax benefits	**$3,897**	$3,004	$ 1,898

The unrecognized tax benefits relate to federal and state research and development tax credits applicable to the 2019 to 2022 tax periods, as well as state income tax filing positions applicable to the 2012 to 2018 and 2020 tax periods. In making these determinations, the Company presumes that taxing authorities pursuing examinations of the Company's compliance with tax law filing requirements will have full knowledge of all relevant information, and, if necessary, the Company will pursue resolution of disputed tax positions by appeals or litigation. Although the Company cannot predict the timing of resolution with tax authorities, the Company estimates that some of the unrecognized tax benefits may change in the next 12 months due to settlement with the tax authorities. The Company expects that a $1.9 million federal tax benefit and a $2.0 million state tax benefit, net of $0.4 million federal tax expense, will reduce the effective tax rate in the future if the unrecognized tax benefits are recognized.

The Company classifies interest and penalties related to uncertain tax positions as a component of interest and other expenses, respectively. As of December 31, 2022, the Company has accrued $0.3 million of interest related to the unrecognized tax benefits. The Company has not accrued any penalties related to the unrecognized tax benefits.

11. DEBT

The Company's borrowings consist of the following:

				As of December 31	
(in thousands)	**Maturities**	**Stated Interest Rate**	**Effective Interest Rate**	**2022**	**2021**
Unsecured notes [1]	2026	5.75%	5.75%	**$ 397,548**	$ 396,830
Revolving credit facility	2027	1.61% - 7.88%	3.16%	**200,236**	209,643
Truist Bank commercial note [2]	2031	1.85% - 5.77%	3.39%	**23,522**	24,504
Truist Bank commercial note	2032	2.10% - 6.17%	3.71%	**66,513**	22,500
Truist Bank commercial note [3]	2032	3.49% - 5.92%	4.78%	**26,548**	–
Pinnacle Bank term loan	2024	4.15%	4.19%	**8,433**	9,558
Other indebtedness	2025 - 2030	0.00% - 16.00%		**3,560**	4,466
Total Debt				**726,360**	667,501
Less: current portion				**(155,813)**	(141,749)
Total Long-Term Debt				**$ 570,547**	$ 525,752

(1) The carrying value is net of $2.5 million and $3.2 million of unamortized debt issuance costs as of December 31, 2022 and 2021, respectively.
(2) The carrying value is net of $0.1 million of unamortized debt issuance costs as of December 31, 2022 and 2021.
(3) The carrying value is net of $0.1 million of unamortized debt issuance costs as of December 31, 2022.

The Company's $400 million senior unsecured fixed-rate notes (the Notes), due June 1, 2026, are guaranteed, jointly and severally, on a senior unsecured basis, by certain of the Company's existing and future domestic subsidiaries, as described in the terms of the indenture. The Notes have a coupon rate of 5.75% per annum, payable semi-annually on June 1 and December 1. The Company may redeem the Notes in whole or in part at any time at the respective redemption prices described in the indenture. At December 31, 2022 and 2021, the fair value of the Notes, based on quoted market prices (Level 2 fair value assessment), totaled $395.1 million and $417.5 million, respectively.

On May 3, 2022, the Company amended the revolving credit facility to, among other things, (i) extend the maturity of the facility to May 30, 2027, (ii) eliminate borrowings under separate U.S. dollar and multicurrency tranches, (iii) update certain interest rate benchmarks including replacing USD London Interbank Offered Rate (LIBOR) with SOFR for borrowings denominated in U.S. dollars, (iv) incorporate a sub-facility for the issuance of letters of credit, and (v) allow for applicable margin for borrowings to be determined and adjusted quarterly based on the Company's Total Net Leverage Ratio. The outstanding balance on the Company's $300 million

unsecured revolving credit facility was $200.2 million as of December 31, 2022, consisting of U.S. dollar borrowings of $140 million with interest payable at SOFR plus 1.375% or prime rate plus 0.375%, and British Pound (GBP) borrowings of £50 million with interest payable at Daily Sterling Overnight Index Average (SONIA) plus 1.375%.

On July 5, 2022, the Company's automotive subsidiary amended its commercial note, dated December 28, 2021, with Truist Bank to, among other things, increase the aggregate loan amount to $71.6 million. The amended commercial note is payable over a 10-year period, with a final payment of the outstanding principal balance due on July 1, 2032. The amended commercial note bears interest at variable rates based on SOFR plus 2.05% per annum.

On July 5, 2022, the Company's automotive subsidiary entered into three additional commercial notes with Truist Bank in an aggregate amount of $27.2 million. The commercial notes are each payable over a 10-year period, with a final payment of the outstanding principal balances due on July 1, 2032. The commercial notes each bear interest at variable rates based on SOFR plus 1.8% per annum. On the same date, the Company's automotive subsidiary entered into three interest rate swap agreements with a total notional value of $27.2 million and a maturity date of July 1, 2032. The interest rate swap agreements will pay the automotive subsidiary interest on the $27.2 million notional amount based on SOFR plus 1.8% per annum and the automotive subsidiary will pay the counterparty a fixed rate of 4.861% per annum. The new interest rate swap agreements were entered into to convert the variable rate borrowings under these commercial notes into fixed rate borrowings. Based on the terms of the new interest rate swap agreements and the underlying borrowings, the new interest rate swaps were determined to be effective and thus qualify as cash flow hedges.

On October 21, 2021, the Company's automotive subsidiary entered into a commercial note with Truist Bank in an aggregate principal amount of $24.75 million. The commercial note is payable over a 10-year period, with a final payment of the outstanding principal balance on October 1, 2031. The commercial note bears interest at variable rates based on SOFR plus 1.8% per annum. The automotive subsidiary used the net proceeds from this commercial note to repay the outstanding balance on the commercial note due in 2029. On the same date, the Company's automotive subsidiary rolled its existing interest rate swap into a new interest rate swap agreement with a total notional value of $24.75 million and a maturity date of October 1, 2031. The new interest rate swap agreement will pay the automotive subsidiary variable interest on the $24.75 million notional amount based on SOFR plus 1.8% per annum and the automotive subsidiary will pay the counterparty a fixed rate of 4.118% per annum. The new interest rate swap agreement was entered into to convert the variable rate borrowing under this commercial note into a fixed rate borrowing. Based on the terms of the new interest rate swap agreement and the underlying borrowing, the new interest rate swap was determined to be effective and thus qualifies as a cash flow hedge.

On December 2, 2022, the GHG subsidiary amended its loan facility with Pinnacle Bank to extend the maturity of its $6.0 million line of credit to December 2, 2023 and updated the interest rate to be based on SOFR plus 2.85% per annum. The GHG subsidiary had no borrowings outstanding under its line of credit as of December 31, 2022 and 2021.

On January 26, 2021, the GHG subsidiary amended its loan facility with Pinnacle Bank to decrease the principal of the term loan to $10.6 million, bearing interest at 4.15% per annum.

The fair value of the Company's other debt, which is based on Level 2 inputs, approximates its carrying value as of December 31, 2022 and 2021. The Company is in compliance with all financial covenants of the revolving credit facility, commercial notes, and Pinnacle Bank term loan as of December 31, 2022.

During 2022 and 2021, the Company had average borrowings outstanding of approximately $689.9 million and $545.2 million, respectively, at average annual interest rates of approximately 4.8%. The Company incurred net interest expense of $51.2 million, $30.5 million and $34.4 million during 2022, 2021 and 2020, respectively.

For the years ended December 31, 2022, 2021 and 2020, the Company recorded interest expense of $16.5 million, $4.1 million and $8.5 million, respectively, to adjust the fair value of the mandatorily redeemable noncontrolling interest. The fair value of the mandatorily redeemable noncontrolling interest was based on the fair value of the underlying subsidiaries owned by GHC One and GHC Two, after taking into account any debt and other noncontrolling interests of its subsidiary investments. The fair value of the owned subsidiaries is determined by reference to either a discounted cash flow or EBITDA multiple, which approximates fair value (Level 3 fair value assessment).

12. FAIR VALUE MEASUREMENTS

The Company's financial assets and liabilities measured at fair value on a recurring basis were as follows:

(in thousands)	As of December 31, 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Money market investments[1]	**$ –**	**$ 7,686**	**$ –**	**$ 7,686**
Marketable equity securities[2]	**609,921**	**–**	**–**	**609,921**
Other current investments[3]	**7,471**	**5,016**	**–**	**12,487**
Interest rate swaps[4]	**–**	**2,636**	**–**	**2,636**
Total Financial Assets	**$617,392**	**$15,338**	**$ –**	**$632,730**
Liabilities				
Contingent consideration liabilities[5]	**$ –**	**$ –**	**$ 8,423**	**$ 8,423**
Foreign exchange swap[6]	**–**	**333**	**–**	**333**
Mandatorily redeemable noncontrolling interest[7]	**–**	**–**	**30,845**	**30,845**
Total Financial Liabilities	**$ –**	**$ 333**	**$39,268**	**$ 39,601**

(in thousands)	As of December 31, 2021			
	Level 1	Level 2	Level 3	Total
Assets				
Marketable equity securities[2]	$809,997	$ –	$ –	$809,997
Other current investments[3]	7,230	7,218	–	14,448
Total Financial Assets	$817,227	$ 7,218	$ –	$824,445
Liabilities				
Contingent consideration liabilities[5]	$ –	$ –	$14,881	$ 14,881
Interest rate swap[8]	–	2,049	–	2,049
Foreign exchange swap[6]	–	484	–	484
Mandatorily redeemable noncontrolling interest[7]	–	–	13,661	13,661
Total Financial Liabilities	$ –	$ 2,533	$28,542	$ 31,075

(1) The Company's money market investments are included in cash and cash equivalents and the value considers the liquidity of the counterparty.

(2) The Company's investments in marketable equity securities are held in common shares of U.S. corporations that are actively traded on U.S. exchanges. Price quotes for these shares are readily available.

(3) Includes U.S. Government Securities, corporate bonds, mutual funds and time deposits. These investments are valued using a market approach based on the quoted market prices of the security or inputs that include quoted market prices for similar instruments and are classified as either Level 1 or Level 2 in the fair value hierarchy.

(4) Included in Deferred Charges and Other Assets. The Company utilized a market approach model using a notional amount of the interest rate swaps multiplied by the observable inputs of time to maturity and market interest rates.

(5) Included in Accounts payable and accrued liabilities and Other Liabilities. The Company determined the fair value of the contingent consideration liabilities using either a Monte Carlo simulation, Black-Scholes model, or probability-weighted analysis depending on the type of target included in the contingent consideration requirements (revenue, EBITDA, client retention). All analyses included estimated financial projections for the acquired businesses and acquisition-specific discount rates.

(6) Included in Accounts payable and accrued liabilities, and valued based on a valuation model that calculates the differential between the contract price and the market-based forward rate.
(7) The fair value of the mandatorily redeemable noncontrolling interest is based on the fair value of the underlying subsidiaries owned by GHC One and GHC Two, after taking into account any debt and other noncontrolling interests of its subsidiary investments. The fair value of the owned subsidiaries is determined using enterprise value analyses which include an equal weighing between guideline public company and discounted cash flow analyses.
(8) Included in Other Liabilities. The Company utilized a market approach model using the notional amount of the interest rate swap multiplied by the observable inputs of time to maturity and market interest rates.

The following table provides a reconciliation of changes in the Company's financial liabilities measured at fair value on a recurring basis, using Level 3 inputs:

(in thousands)	Contingent consideration liabilities	Mandatorily redeemable noncontrolling interest
As of December 31, 2020	$ 37,174	$ 9,240
Acquisition of business	1,868	–
Changes in fair value [1]	(5,482)	4,077
Capital contributions	–	427
Accretion of value included in net income [1]	1,275	–
Settlements or distributions	(19,942)	(83)
Foreign currency exchange rate changes	(12)	–
As of December 31, 2021	14,881	13,661
Acquisition of business	**397**	**–**
Changes in fair value [1]	**(6,672)**	**16,489**
Capital contributions	**–**	**1,018**
Accretion of value included in net income [1]	**1,567**	**–**
Settlements or distributions	**(1,750)**	**(323)**
As of December 31, 2022	**$ 8,423**	**$30,845**

(1) Changes in fair value and accretion of value of contingent consideration liabilities are included in Selling, general and administrative expenses and the changes in fair value of mandatorily redeemable noncontrolling interest is included in Interest expense in the Company's Consolidated Statements of Operations.

For the years ended December 31, 2022, 2021 and 2020, the Company recorded goodwill and other long-lived asset impairment charges of $129.0 million, $32.9 million and $30.2 million, respectively (see Note 19). The remeasurement of goodwill and other long-lived assets is classified as a Level 3 fair value assessment due to the significance of unobservable inputs developed in the determination of the fair value. The Company used a discounted cash flow model to determine the estimated fair value of the reporting units, indefinite-lived intangible assets, and other long-lived assets. Where appropriate, a market value approach was also utilized to supplement the discounted cash flow model. The Company made estimates and assumptions regarding future cash flows, royalty rates, discount rates, market values, and long-term growth rates.

For the years ended December 31, 2022, 2021 and 2020, the Company recorded gains of $6.9 million, $11.8 million, and $4.2 million, respectively, to equity securities that are accounted for as cost method investments based on observable transactions for identical or similar investments of the same issuer. For the years ended December 31, 2022 and 2020, the Company recorded impairment losses of $1.3 million and $7.3 million, respectively, to equity securities that are accounted for as cost method investments.

For the years ended December 31, 2021 and 2020, the Company recorded impairment charges of $6.6 million on one of its investments in affiliates and $3.6 million on two of its investments in affiliates, respectively (see Note 4).

13. REVENUE FROM CONTRACTS WITH CUSTOMERS

The Company generated 81%, 78% and 78% of its revenue from U.S. domestic sales in 2022, 2021 and 2020, respectively. The remaining 19%, 22%, and 22% of revenue was generated from non-U.S. sales.

In 2022, 2021 and 2020, the Company recognized 58%, 67%, and 73%, respectively, of its revenue over time as control of the services and goods transferred to the customer. The remaining 42%, 33% and 27%, respectively, of revenue was recognized at a point in time, when the customer obtained control of the promised goods.

The determination of the method by which the Company measures its progress towards the satisfaction of its performance obligations requires judgment and is described in the Summary of Significant Accounting Policies (Note 2).

In the second quarter of 2020, GHG received $7.4 million under the CARES Act as a general distribution from the Provider Relief Fund to provide relief for lost revenues and expenses incurred in connection with COVID-19. The healthcare revenues for the year ended December 31, 2020 includes $5.7 million for lost revenues related to COVID-19 (see Note 19).

Contract Assets. As of December 31, 2022, the Company recognized a contract asset of $26.3 million related to a contract at a Kaplan International business, which is included in Deferred Charges and Other Assets. The Company expects to recognize an additional $312.0 million related to the remaining performance obligation in the contract over the next seven years. As of December 31, 2021, the contract asset was $17.7 million.

Deferred Revenue. The Company records deferred revenue when cash payments are received or due in advance of the Company's performance, including amounts which are refundable. The following table presents the change in the Company's deferred revenue balance during the year ended December 31, 2022:

	As of December 31		
(in thousands)	**2022**	**2021**	**% Change**
Deferred revenue	**$385,507**	$363,065	6

In April 2020, GHG received $31.5 million under the expanded Medicare Accelerated and Advanced Payment Program modified by the CARES Act as a result of COVID-19. The Department of Health and Human Services began to recoup this advance 365 days after the payment was issued. The advance has been recouped in full as of December 31, 2022. For the years ended December 31, 2022 and 2021, GHG recognized $12.6 million and $18.9 million of the balance in revenue for claims submitted for eligible services, respectively.

The majority of the change in the deferred revenue balance is due to increased enrollment in the Kaplan International division as a result of recovery from COVID-19, offset by the advanced Medicare payment. During the year ended December 31, 2022, the Company recognized $308.2 million from the Company's deferred revenue balance as of December 31, 2021.

Revenue allocated to remaining performance obligations represents deferred revenue amounts that will be recognized as revenue in future periods. As of December 31, 2022, the deferred revenue balance related to certain medical and nursing qualifications with an original contract length greater than twelve months at Kaplan Supplemental Education was $7.2 million. Kaplan Supplemental Education expects to recognize 68% of this revenue over the next twelve months and the remainder thereafter.

Costs to Obtain a Contract. The following table presents changes in the Company's costs to obtain a contract asset:

(in thousands)	Balance at Beginning of Year	Costs Associated with New Contracts	Less: Costs Amortized During the Year	Other	Balance at End of Year
2022	**$26,081**	**$72,606**	**$(66,064)**	**$(976)**	**$31,647**
2021	24,363	61,214	(59,116)	(380)	26,081
2020	31,020	51,891	(58,855)	307	24,363

The majority of other activity was related to currency translation adjustments in 2022, 2021, and 2020.

14. CAPITAL STOCK, STOCK AWARDS AND STOCK OPTIONS

Capital Stock. Each share of Class A common stock and Class B common stock participates equally in dividends. The Class B stock has limited voting rights and as a class has the right to elect 30% of the Board of Directors; the Class A stock has unlimited voting rights, including the right to elect a majority of the Board of Directors.

During 2022, 2021, and 2020 the Company purchased a total of 121,761, 93,969, and 406,112 shares, respectively, of its Class B common stock at a cost of approximately $71.4 million, $55.7 million, and $161.8 million, respectively. On September 10, 2020, the Board of Directors authorized the Company to purchase up to 500,000 shares of its Class B Common Stock. The Company did not announce a ceiling price or time limit for the purchases. At December 31, 2022, the Company had remaining authorization from the Board of Directors to purchase up to 148,421 shares of Class B common stock.

Stock Awards. In 2012, the Company adopted an incentive compensation plan (the 2012 Plan), which, among other provisions, authorizes the awarding of Class B common stock to key employees in the form of stock awards, stock options and other awards involving the issuance of shares. Stock awards made under the 2012 Plan are primarily subject to the general restriction that stock awarded to a participant will be forfeited and revert to Company ownership if the participant's employment terminates before the end of a specified period of service to the Company. At December 31, 2022, there were 206,323 shares reserved for issuance under the 2012 Plan, which were all subject to stock awards and stock options outstanding.

In 2022, the Company adopted a new incentive compensation plan (the 2022 Plan), which, among other provisions, authorizes the awarding of Class B common stock to key employees and non-employee Directors in the form of stock awards, stock options and other awards involving the issuance of shares. All stock awards, stock options and other awards involving the issuance of shares issued subsequent to the adoption of this plan are covered under this new incentive compensation plan. Stock awards made under the 2022 Plan are primarily subject to the general restriction that stock awarded to a participant will be forfeited and revert to Company ownership if the participant's employment terminates before the end of a specified period of service to the Company. The number of Class B common shares authorized for issuance under the 2022 Plan is 500,000 shares. At December 31, 2022, there were 499,655 shares reserved for issuance under the 2022 Plan, all of which were available for future awards.

Activity related to stock awards under these incentive compensation plans for the year ended December 31, 2022 was as follows:

	Number of Shares	Average Grant-Date Fair Value
Beginning of year, unvested	31,571	$579.37
Awarded	**1,221**	**605.49**
Vested	**(1,221)**	**605.49**
Forfeited	**(4,353)**	**576.45**
End of Year, unvested	**27,218**	**579.84**

For the share awards outstanding at December 31, 2022, the aforementioned restriction is expected to lapse in 2023 for 11,120 shares, 2025 for 14,098 shares and 2027 for 2,000 shares. Also, early in 2023, the Company issued stock awards of 14,630 shares. Stock-based compensation costs resulting from Company stock awards were $3.4 million, $3.9 million and $4.1 million in 2022, 2021 and 2020, respectively.

As of December 31, 2022, there was $4.6 million of total unrecognized compensation expense related to these awards. That cost is expected to be recognized on a straight-line basis over a weighted average period of 1.4 years.

Stock Options. Stock options granted under the incentive compensation plans cannot be less than the fair value on the grant date, generally vest over six years and have a maximum term of ten years.

Activity related to options outstanding for the year ended December 31, 2022 was as follows:

	Number of Shares	Average Option Price
Beginning of year	183,189	$612.16
Granted	–	–
Exercised	**(5,084)**	**357.35**
Expired or forfeited	–	–
End of Year	**178,105**	**619.44**

Of the shares covered by options outstanding at the end of 2022, 126,264 are now exercisable; 13,211 are expected to become exercisable in 2023; 12,876 are expected to become exercisable in 2024; 12,877 are expected to become exercisable in 2025; and 12,877 are expected to become exercisable in 2026. For 2022, 2021 and 2020, the Company recorded expense of $1.2 million, $1.7 million and $2.2 million, respectively, related to stock options. Information related to stock options outstanding and exercisable at December 31, 2022, is as follows:

	Options Outstanding			Options Exercisable		
Range of Exercise Prices	Shares Outstanding at 12/31/2022	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price	Shares Exercisable at 12/31/2022	Weighted Average Remaining Contractual Life (years)	Weighted Average Exercise Price
$ 427	**74,105**	**7.7**	**426.86**	**22,599**	**7.7**	**426.86**
719	**77,258**	**1.8**	**719.15**	**77,258**	**1.8**	**719.15**
805–872	**26,742**	**3.0**	**865.02**	**26,407**	**2.9**	**865.26**
	178,105	**4.4**	**619.44**	**126,264**	**3.1**	**697.39**

At December 31, 2022, the intrinsic value for all options outstanding, exercisable and unvested was $13.1 million, $4.0 million and $9.1 million, respectively. The intrinsic value of a stock option is the amount by which the market value of the underlying stock exceeds the exercise price of the option. The market value of the Company's stock was $604.21 at December 31, 2022. At December 31, 2022, there were 51,841 unvested options related to this plan with an average exercise price of $429.57 and a weighted average remaining contractual term of 7.7 years. At December 31, 2021, there were 65,050 unvested options with an average exercise price of $431.16 and a weighted average remaining contractual term of 8.7 years.

As of December 31, 2022, total unrecognized stock-based compensation expense related to stock options was $4.4 million, which is expected to be recognized on a straight-line basis over a weighted average period of approximately 3.7 years. There were 5,084 options exercised during 2022. The total intrinsic value of options exercised during 2022 was $1.2 million; a tax benefit from these option exercises of $0.3 million was realized. There were no options exercised during 2021. There were 77,258 options exercised during 2020. The total intrinsic value of options exercised during 2020 was $11.1 million; a tax benefit from these option exercises of $2.9 million was realized.

During 2020, the Company granted 77,258 options at an exercise price above the fair market value of its common stock at the date of grant. The weighted average grant-date fair value of options granted during 2020 was $93.79. No options were granted during 2022 or 2021.

The fair value of options at date of grant was estimated using the Black-Scholes method utilizing the following assumptions:

	2020
Expected life (years)	8
Interest rate	0.53%
Volatility	27.70%
Dividend yield	1.45%

Other Awards. In 2022, the Company granted a stock award to an executive officer that is subject to price-based vesting conditions. The stock award provides the executive officer the right to receive 1,000 shares of the Company's Class B common stock each time the Company's closing share price exceeds a certain share price target for a 90 consecutive day period; the award period expires on December 31, 2027. The grant date fair value of the stock award totaled $3.5 million, which was estimated using a Monte Carlo simulation. The grant date fair value is recognized over the derived service period of each tranche. No shares related to this award vested in 2022 and the Company recognized $1.3 million in stock-based compensation expense related to this award in 2022.

For the year ended December 31, 2022, the Company recognized expense of $0.2 million related to the issuance and vesting of 345 shares to non-employee Directors under the 2022 Plan.

The Company also maintains a stock option plan at Kaplan. Under the provisions of this plan, options are issued with an exercise price equal to the estimated fair value of Kaplan's common stock, and options vest ratably over the number of years specified (generally four to five years) at the time of the grant. Upon exercise, an option holder may receive Kaplan shares or cash equal to the difference between the exercise price and the then fair value.

At December 31, 2022, a Kaplan senior manager holds 7,206 Kaplan restricted shares. The fair value of Kaplan's common stock is determined by the Company's compensation committee of the Board of Directors, and in January 2023, the committee set the fair value price at $1,565 per share. No options were awarded during 2022, 2021, or 2020; no options were exercised during 2022, 2021 or 2020; and no options were outstanding at December 31, 2022.

Kaplan recorded stock compensation expense of $1.0 million and $1.3 million in 2022 and 2021, respectively, and a stock compensation credit of $1.1 million in 2020. At December 31, 2022, the Company's accrual balance related to the Kaplan restricted shares totaled $11.3 million. There were no payouts in 2022, 2021 or 2020.

Earnings Per Share. The Company's unvested restricted stock awards contain nonforfeitable rights to dividends and, therefore, are considered participating securities for purposes of computing earnings per share pursuant to the two-class method. The diluted earnings per share computed under the two-class method is lower than the diluted earnings per share computed under the treasury stock method, resulting in the presentation of the lower amount in diluted earnings per share. The computation of earnings per share under the two-class method excludes the income attributable to the unvested restricted stock awards from the numerator and excludes the dilutive impact of those underlying shares from the denominator.

The following reflects the Company's net income and share data used in the basic and diluted earnings per share computations using the two-class method:

	Year Ended December 31		
(in thousands, except per share amounts)	**2022**	**2021**	**2020**
Numerator:			
Numerator for basic earnings per share:			
Net income attributable to Graham Holdings Company common stockholders	**$ 67,079**	$352,075	$300,365
Less: Dividends paid–common stock outstanding and unvested restricted shares	**(30,712)**	(30,136)	(29,970)
Undistributed earnings	**36,367**	321,939	270,395
Percent allocated to common stockholders	**99.43%**	99.36%	99.45%
	36,160	319,867	268,917
Add: Dividends paid–common stock outstanding	**30,540**	29,946	29,812
Numerator for basic earnings per share	**66,700**	349,813	298,729
Add: Additional undistributed earnings due to dilutive stock options	**–**	5	4
Numerator for diluted earnings per share	**$ 66,700**	$349,818	$298,733
Denominator:			
Denominator for basic earnings per share:			
Weighted average shares outstanding	**4,823**	4,951	5,124
Add: Effect of dilutive stock options	**13**	14	15
Denominator for diluted earnings per share	**4,836**	4,965	5,139
Graham Holdings Company Common Stockholders:			
Basic earnings per share	**$ 13.83**	$ 70.65	$ 58.30
Diluted earnings per share	**$ 13.79**	$ 70.45	$ 58.13

Earnings per share amounts may not recalculate due to rounding.

Diluted earnings per share excludes the following weighted average potential common shares, as the effect would be antidilutive, as computed under the treasury stock method:

	Year Ended December 31		
(in thousands)	**2022**	**2021**	**2020**
Weighted average restricted stock	**18**	13	12

The 2022, 2021 and 2020 diluted earnings per share amounts exclude the effects of 105,000, 104,000 and 181,258 stock options and contingently issuable shares outstanding, respectively, as their inclusion would have been antidilutive due to a market condition.

In 2022, 2021 and 2020, the Company declared regular dividends totaling $6.32, $6.04 and $5.80 per share, respectively.

15. PENSIONS AND OTHER POSTRETIREMENT PLANS

The Company maintains various pension and incentive savings plans and contributed to multiemployer plans on behalf of certain union-represented employee groups. Most of the Company's employees are covered by these plans. The Company also provides healthcare and life insurance benefits to certain retired employees. These employees become eligible for benefits after meeting age and service requirements.

The Company uses a measurement date of December 31 for its pension and other postretirement benefit plans.

Defined Benefit Plans. The Company's defined benefit pension plans consist of various pension plans and a Supplemental Executive Retirement Plan (SERP) offered to certain executives of the Company.

In 2022, a new pension credit retention program was implemented by the Company for certain Graham Healthcare Group employees; the program offers a pension credit up to $50,000 per employee, cliff vested after three years of continuous employment for existing employees and new employees hired from January 1, 2022 through December 31, 2024. The Company recorded $10.5 million in pension service cost expense in 2022 related to this program.

In the fourth quarter of 2022, the Company recorded $3.6 million in expenses related to a Separation Incentive Program (SIP) for certain Kaplan employees, which was funded from the assets of the Company's pension plans.

In the second quarter of 2021, the Company recorded $1.1 million in expenses related to a SIP for certain Dekko employees, which was funded from the assets of the Company's pension plans.

In the second quarter of 2020, the Company recorded $6.0 million in expenses related to a SIP for certain Kaplan, Code3 and Decile employees, which was funded from the assets of the Company's pension plans. In the third quarter of 2020, the Company recorded $7.8 million in expenses related to a SIP for certain Kaplan employees, which was funded from the assets of the Company's pension plans.

The following table sets forth obligation, asset and funding information for the Company's defined benefit pension plans:

(in thousands)	Pension Plans As of December 31 2022	2021
Change in Benefit Obligation		
Benefit obligation at beginning of year	**$1,088,309**	$1,095,117
Service cost	**32,567**	22,991
Interest cost	**30,504**	26,917
Amendments	**–**	2
Actuarial (gain) loss	**(219,466)**	5,660
Benefits paid	**(65,240)**	(63,510)
Special termination benefits	**3,624**	1,132
Benefit Obligation at End of Year	**$ 870,298**	$1,088,309
Change in Plan Assets		
Fair value of assets at beginning of year	**$3,394,823**	$2,803,422
Actual return on plan assets	**(801,239)**	654,911
Benefits paid	**(65,240)**	(63,510)
Fair Value of Assets at End of Year	**$2,528,344**	$3,394,823
Funded Status	**$1,658,046**	$2,306,514

(in thousands)	SERP As of December 31 2022	2021
Change in Benefit Obligation		
Benefit obligation at beginning of year	**$ 112,706**	$ 122,299
Service cost	**911**	1,022
Interest cost	**3,289**	2,943
Actuarial gain	**(20,956)**	(7,640)
Benefits paid	**(5,932)**	(5,918)
Benefit Obligation at End of Year	**$ 90,018**	$ 112,706
Funded Status	**$ (90,018)**	$ (112,706)

The changes in the Company's benefit obligations for the pension plans and SERP were primarily due to the recognition of an actuarial gain resulting from an increase to the discount rate used to measure the benefit obligation and benefits paid during the year.

The accumulated benefit obligation for the Company's pension plans at December 31, 2022 and 2021, was $843.6 million and $1,052.7 million, respectively. The accumulated benefit obligation for the Company's SERP at December 31, 2022 and 2021, was $88.0 million and $112.2 million, respectively. The amounts recognized in the Company's Consolidated Balance Sheets for its defined benefit pension plans are as follows:

	Pension Plans		SERP	
	As of December 31		As of December 31	
(in thousands)	2022	2021	2022	2021
Noncurrent asset	**$1,658,046**	$2,306,514	**$ –**	$ –
Current liability	**–**	–	**(6,570)**	(6,334)
Noncurrent liability	**–**	–	**(83,448)**	(106,372)
Recognized Asset (Liability)	**$1,658,046**	$2,306,514	**$(90,018)**	$(112,706)

Key assumptions utilized for determining the benefit obligation are as follows:

	Pension Plans		SERP	
	As of December 31		As of December 31	
	2022	2021	2022	2021
Discount rate	**5.5%**	2.9%	**5.5%**	2.9%
Rate of compensation increase – age graded	**5.0% – 1.0%**	5.0% – 1.0%	**5.0% – 1.0%**	5.0% – 1.0%
Cash balance interest crediting rate	**4.28% with phase in to 5.50% in 2025**	1.41% with phase in to 2.90% in 2024	**–**	–

The Company made no contributions to its pension plans in 2022 and 2021, and the Company does not expect to make any contributions in 2023. The SERP is unfunded, therefore, the Company made actual benefit payments of $5.9 million to beneficiaries in each of the years ended December 31, 2022 and 2021.

At December 31, 2022, future estimated benefit payments, excluding charges for early retirement programs, are as follows:

(in thousands)	Pension Plans	SERP
2023	$ 60,164	$ 6,748
2024	61,225	6,999
2025	67,838	7,244
2026	66,898	7,413
2027	68,227	7,452
2028 – 2032	334,626	36,725

The total (benefit) cost arising from the Company's defined benefit pension plans consists of the following components:

	Pension Plans		
	Year Ended December 31		
(in thousands)	2022	2021	2020
Service cost	**$ 32,567**	$ 22,991	$ 22,656
Interest cost	**30,504**	26,917	32,587
Expected return on assets	**(167,485)**	(137,878)	(113,427)
Amortization of prior service cost	**2,835**	2,846	2,830
Recognized actuarial gain	**(68,656)**	(7,906)	–
Net Periodic Benefit for the Year	**(170,235)**	(93,030)	(55,354)
Special separation benefit expense	**3,624**	1,132	13,781
Total Benefit for the Year	**$(166,611)**	$ (91,898)	$ (41,573)
Other Changes in Plan Assets and Benefit Obligations Recognized in Other Comprehensive Income			
Current year actuarial loss (gain)	**$ 749,258**	$(511,373)	$(371,621)
Current year prior service cost	**–**	2	69
Amortization of prior service cost	**(2,835)**	(2,846)	(2,830)
Recognized net actuarial gain	**68,656**	7,906	–
Total Recognized in Other Comprehensive Income (Before Tax Effects)	**$ 815,079**	$(506,311)	$(374,382)
Total Recognized in Total Benefit and Other Comprehensive Income (Before Tax Effects)	**$ 648,468**	$(598,209)	$(415,955)

	SERP		
	Year Ended December 31		
(in thousands)	2022	2021	2020
Service cost	**$ 911**	$ 1,022	$ 954
Interest cost	**3,289**	2,943	3,678
Amortization of prior service cost	**36**	331	331
Recognized actuarial loss	**666**	5,930	5,267
Total Cost for the Year	**$ 4,902**	$ 10,226	$ 10,230
Other Changes in Benefit Obligations Recognized in Other Comprehensive Income			
Current year actuarial (gain) loss	**$ (20,956)**	$ (7,640)	$ 7,448
Amortization of prior service cost	**(36)**	(331)	(331)
Recognized net actuarial loss	**(666)**	(5,930)	(5,267)
Total Recognized in Other Comprehensive Income (Before Tax Effects)	**$ (21,658)**	$ (13,901)	$ 1,850
Total Recognized in Total Cost and Other Comprehensive Income (Before Tax Effects)	**$ (16,756)**	$ (3,675)	$ 12,080

The costs for the Company's defined benefit pension plans are actuarially determined. Below are the key assumptions utilized to determine periodic cost:

	Pension Plans			SERP		
	Year Ended December 31			Year Ended December 31		
	2022	2021	2020	2022	2021	2020
Discount rate	**2.9%**	2.5%	3.3%	**2.9%**	2.5%	3.3%
Expected return on plan assets	**6.25%**	6.25%	6.25%	**–**	–	–
Rate of compensation increase – age graded	**5.0% – 1.0%**	5.0% – 1.0%	5.0% – 1.0%	**5.0% – 1.0%**	5.0% – 1.0%	5.0% – 1.0%
Cash balance interest crediting rate	**1.41% with phase in to 2.90% in 2024**	1.41% with phase in to 2.50% in 2023	2.77% with phase in to 3.30% in 2022	**–**	–	–

Accumulated other comprehensive income (AOCI) includes the following components of unrecognized net periodic cost for the defined benefit plans:

	Pension Plans		SERP	
	As of December 31		As of December 31	
(in thousands)	2022	2021	2022	2021
Unrecognized actuarial (gain) loss	**$(524,709)**	$(1,342,623)	**$(2,511)**	$19,111
Unrecognized prior service cost	**1,676**	4,511	**–**	36
Gross Amount	**(523,033)**	(1,338,112)	**(2,511)**	19,147
Deferred tax liability (asset)	**145,430**	355,078	**230**	(5,340)
Net Amount	**$(377,603)**	$ (983,034)	**$(2,281)**	$13,807

Defined Benefit Plan Assets. The Company's defined benefit pension obligations are funded by a portfolio made up of private investment funds, a U.S. stock index fund, and a relatively small number of stocks and high-quality fixed-income securities that are held by a third-party trustee. The assets of the Company's pension plans were allocated as follows:

	As of December 31	
	2022	2021
U.S. equities	**59%**	61%
Private investment funds	**16%**	17%
International equities	**11%**	9%
U.S. stock index fund	**7%**	9%
U.S. fixed income	**7%**	4%
	100%	100%

The Company manages approximately 41% of the pension assets internally, of which the majority is invested in private investment funds with the remaining investments in Berkshire Hathaway stock, a U.S. stock index fund, and short-term fixed-income securities. The remaining 59% of plan assets are managed by two investment companies. The goal of the investment managers is to produce moderate long-term growth in the value of these assets, while protecting them against large decreases in value. Both investment managers may invest in a combination of equity and fixed-income securities and cash. The managers are not permitted to invest in securities of the Company or in alternative investments. One investment manager cannot invest more than 15% of the assets at the time of purchase in the stock of Alphabet and Berkshire Hathaway, and no more than 30% of the assets it manages in specified

international exchanges at the time the investment is made. The other investment manager cannot invest more than 20% of the assets at the time of purchase in the stock of Berkshire Hathaway, and no more than 15% of the assets it manages in specified international exchanges at the time the investment is made, and no less than 10% of the assets could be invested in fixed-income securities. Excluding the exceptions noted above, the investment managers cannot invest more than 10% of the assets in the securities of any other single issuer, except for obligations of the U.S. Government, without receiving prior approval from the Plan administrator.

In determining the expected rate of return on plan assets, the Company considers the relative weighting of plan assets, the historical performance of total plan assets and individual asset classes and economic and other indicators of future performance. In addition, the Company may consult with and consider the input of financial and other professionals in developing appropriate return benchmarks.

The Company evaluated its defined benefit pension plan asset portfolio for the existence of significant concentrations (defined as greater than 10% of plan assets) of credit risk as of December 31, 2022. Types of concentrations that were evaluated include, but are not limited to, investment concentrations in a single entity, type of industry, foreign country and individual fund. At December 31, 2022, the pension plan held investments in one common stock and one private investment fund that exceeded 10% of total plan assets, valued at $842.6 million, or approximately 33% of total plan assets. At December 31, 2021, the pension plan held investments in one common stock and one private investment fund that exceeded 10% of total plan assets, valued at $998.8 million, or approximately 29% of total plan assets.

The Company's pension plan assets measured at fair value on a recurring basis were as follows:

	As of December 31, 2022			
(in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash equivalents	**$ 1,980**	**$–**	**$–**	**$ 1,980**
Equity securities				
U.S. equities[1]	**1,507,609**	**–**	**–**	**1,507,609**
International equities[2]	**270,872**	**–**	**–**	**270,872**
Total Investments	**$1,780,461**	**$–**	**$–**	**$1,780,461**
Short-term investment funds measured at NAV[3]				**170,062**
Private investment funds measured at NAV[4]				**406,600**
U.S. stock index fund measured at NAV[5]				**168,532**
Receivables, net				**2,689**
Total				**$2,528,344**

	As of December 31, 2021			
(in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Cash equivalents	$ 2,159	$–	$–	$ 2,159
Equity securities				
U.S. equities[1]	2,067,152	–	–	2,067,152
International equities[2]	301,640	–	–	301,640
Total Investments	$2,370,951	$–	$–	$2,370,951
Short-term investment funds measured at NAV[3]				145,683
Private investment funds measured at NAV[4]				573,970
U.S. stock index fund measured at NAV[5]				302,478
Receivables, net				1,741
Total				$3,394,823

(1) *U.S. equities.* These investments are held in common and preferred stock of U.S. corporations and American Depositary Receipts (ADRs) traded on U.S. exchanges. Common and preferred shares and ADRs are traded actively on exchanges, and price quotes for these shares are readily available. These investments are classified as Level 1 in the valuation hierarchy.

(2) *International equities.* These investments are held in common and preferred stock issued by non-U.S. corporations. Common and preferred shares are traded actively on exchanges, and price quotes for these shares are readily available. These investments are classified as Level 1 in the valuation hierarchy.
(3) *Short-term investment funds.* These investments include commingled funds that are primarily held in U.S. Treasury securities. The funds are valued using the net asset value (NAV) provided by the administrator of the funds and reviewed by the Company.
(4) *Private investment funds.* This category includes a commingled fund and a private investment fund. The commingled fund invests in a diversified mix of publicly traded securities (U.S. and international stocks) and private companies. The private investment fund invests in non-public companies. The funds are valued using the NAV provided by the administrator of the funds and reviewed by the Company. The NAV is based on the value of the underlying assets owned by the fund, minus liabilities and divided by the number of units outstanding.
(5) *U.S. stock index fund.* This fund consists of investments held in common stock, plus an uninvested cash portion comprising less than 1% of fund value, that together are designed to track the performance of the S&P 500 Index. The fund is valued using the NAV provided by the administrator of the fund and reviewed by the Company. The NAV is based on the value of the underlying assets owned by the fund, minus liabilities and divided by the number of units outstanding.

The following table sets forth a summary of the Plan's investments with a reported NAV:

(in thousands)	Fair Value	Unfunded Commitment	Redemption Frequency	Other Redemption Restriction	Redemption Notice Period
Short-term investment funds					
2022	**$170,062**	**$ –**	**Immediate**	**None**	**None**
2021	$145,683	$ –	Immediate	None	None
Private investment funds					
2022	**$406,600**	**$20,673**	**(1)**	**(1)**	**90 days**
2021	$573,970	$26,088	(1)	(1)	90 days
U.S. stock index fund					
2022	**$168,532**	**$ –**	**Immediate**	**None**	**1 day**
2021	$302,478	$ –	Immediate	None	1 day

(1) Five percent of the NAV of the investment in the commingled fund may be redeemed annually starting at the 12-month anniversary of the investment, subject to certain limitations. Additionally, the investment in the commingled fund may be redeemed in part, or in full, at the 60-month anniversary of the investment, or at any subsequent 36-month anniversary date following the initial 60-month anniversary. The investment in the private investment fund is generally not redeemable until the dissolution of the fund.

Other Postretirement Plans. The following table sets forth obligation, asset and funding information for the Company's other postretirement plans:

(in thousands)	Postretirement Plans As of December 31 2022	2021
Change in Benefit Obligation		
Benefit obligation at beginning of year	**$ 4,722**	$ 5,587
Interest cost	**98**	92
Actuarial gain	**(1,205)**	(582)
Benefits paid, net of Medicare subsidy	**(215)**	(375)
Benefit Obligation at End of Year	**$ 3,400**	$ 4,722
Funded Status	**$(3,400)**	$(4,722)

The change in the benefit obligation for the Company's other postretirement plans was due to updated claims experience based on actual premium rates, the recognition of an actuarial gain resulting from an increase to the discount rate used to measure the benefit obligation, and benefits paid during the year.

The amounts recognized in the Company's Consolidated Balance Sheets for its other postretirement plans are as follows:

(in thousands)	Postretirement Plans As of December 31 2022	2021
Current liability	**$ (541)**	$ (671)
Noncurrent liability	**(2,859)**	(4,051)
Recognized Liability	**$(3,400)**	$(4,722)

The discount rates utilized for determining the benefit obligation at December 31, 2022 and 2021, for the postretirement plans were 4.76% and 2.23%, respectively. The assumed healthcare cost trend rate used in measuring the postretirement benefit obligation at December 31, 2022, was 6.75% for pre-age 65, decreasing to 4.5% in the year 2032 and thereafter. The assumed healthcare cost trend rate used in measuring the postretirement benefit obligation at December 31, 2022, was 6.92% for post-age 65, decreasing to 4.5% in the year 2032 and thereafter. The assumed healthcare cost trend rate used in measuring the postretirement benefit obligation at December 31, 2022, was 8.00% for Medicare Advantage, decreasing to 4.5% in the year 2032 and thereafter.

The Company's postretirement benefit plans are unfunded, therefore, the Company made actual benefit payments of $0.2 million and $0.4 million to beneficiaries for the years ended December 31, 2022 and 2021, respectively.

At December 31, 2022, future estimated benefit payments are as follows:

(in thousands)	Postretirement Plans
2023	$ 541
2024	$ 468
2025	$ 382
2026	$ 341
2027	$ 322
2028 – 2032	$2,054

The total benefit arising from the Company's other postretirement plans consists of the following components:

(in thousands)	Postretirement Plans Year Ended December 31 2022	2021	2020
Interest cost	**$ 98**	$ 92	$ 167
Amortization of prior service credit	**(7)**	(7)	(481)
Recognized actuarial gain	**(2,843)**	(3,510)	(4,048)
Net Periodic Benefit for the Year	**(2,752)**	(3,425)	(4,362)
Settlement	**–**	(120)	–
Total Benefit for the Year	**$(2,752)**	$(3,545)	$(4,362)
Other Changes in Benefit Obligations Recognized in Other Comprehensive Income			
Current year actuarial gain	**$(1,205)**	$ (582)	$ (991)
Amortization of prior service credit	**7**	7	481
Recognized actuarial gain	**2,843**	3,510	4,048
Settlement	**–**	120	–
Total Recognized in Other Comprehensive Income (Before Tax Effects)	**$ 1,645**	$ 3,055	$ 3,538
Total Recognized in Benefit and Other Comprehensive Income (Before Tax Effects)	**$(1,107)**	$ (490)	$ (824)

The costs for the Company's postretirement plans are actuarially determined. The discount rate utilized to determine periodic cost for the years ended December 31, 2022, 2021 and 2020 were 2.23%, 1.78% and 2.68%. AOCI included the following components of unrecognized net periodic benefit for the postretirement plans:

(in thousands)	As of December 31 2022	2021
Unrecognized actuarial gain	**$(12,004)**	$(13,642)
Unrecognized prior service credit	**(5)**	(12)
Gross Amount	**(12,009)**	(13,654)
Deferred tax liability	**3,302**	3,724
Net Amount	**$ (8,707)**	$ (9,930)

Multiemployer Pension Plans. In 2022, 2021 and 2020, the Company contributed to one multiemployer defined benefit pension plan under the terms of a collective-bargaining agreement that covered certain union-represented employees. The Company's total contributions to the multiemployer pension plan amounted to $0.1 million in each year for 2022, 2021 and 2020.

Savings Plans. The Company recorded expense associated with retirement benefits provided under incentive savings plans (primarily 401(k) plans) of approximately $11.6 million in 2022, $10.9 million in 2021 and $8.8 million in 2020.

16. OTHER NON-OPERATING INCOME

A summary of non-operating income is as follows:

(in thousands)	Year Ended December 31		
	2022	2021	2020
Net gain on sale of businesses	**$22,679**	$ 3,789	$213,302
Net gain on cost method investments	**6,883**	11,756	4,209
Gain on sale of cost method investments	**3,294**	9,355	1,039
Foreign currency loss, net	**(2,023)**	(179)	(2,153)
Impairment of cost method investments	**(1,305)**	–	(7,327)
Gain on acquiring a controlling interest in an equity affiliate	**–**	–	3,708
Gain on sale of investment in affiliates	**604**	–	1,370
Other, net	**3,368**	7,833	386
Total Other Non-Operating Income	**$33,500**	$32,554	$214,534

The gains on cost method investments result from observable price changes in the fair value of the underlying equity securities accounted for under the cost method (see Notes 4 and 12).

For the years ended December 31, 2022, 2021 and 2020, the Company recorded contingent consideration gains of $4.3 million, $3.9 million and $3.5 million, respectively, related to the disposition of Kaplan University (KU) in 2018.

In the fourth quarter of 2022, the Company recorded an $18.4 million gain related to the CyberVista transaction (see Notes 3 and 4). The Company used a market approach to determine the fair value of the noncontrolling financial interest retained in CyberVista through its interest in N2K Networks.

In the second quarter of 2020, the Company made an additional investment in Framebridge (see Notes 3 and 4) that resulted in the Company obtaining control of the investee. The Company remeasured its previously held equity interest in Framebridge at the acquisition-date fair value and recorded a gain of $3.7 million. The fair value was determined using a market approach by using the share value indicated in the transaction.

In the fourth quarter of 2020, the Company recorded a $209.8 million gain on the sale of Megaphone.

17. ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

The other comprehensive (loss) income consists of the following components:

(in thousands)	Year Ended December 31, 2022		
	Before-Tax Amount	Income Tax	After-Tax Amount
Foreign currency translation adjustments:			
Translation adjustments arising during the year	**$ (48,340)**	**$ –**	**$ (48,340)**
Pension and other postretirement plans:			
Actuarial loss	**(727,097)**	**187,018**	**(540,079)**
Amortization of net actuarial gain included in net income	**(70,833)**	**18,219**	**(52,614)**
Amortization of net prior service cost included in net income	**2,864**	**(737)**	**2,127**
	(795,066)	**204,500**	**(590,566)**
Cash flow hedges:			
Gain for the year	**4,765**	**(1,096)**	**3,669**
Other Comprehensive Loss	**$(838,641)**	**$203,404**	**$(635,237)**

(in thousands)	Year Ended December 31, 2021 Before-Tax Amount	Income Tax	After-Tax Amount
Foreign currency translation adjustments:			
Translation adjustments arising during the year	$ (16,052)	$ –	$ (16,052)
Pension and other postretirement plans:			
Actuarial gain	519,595	(133,915)	385,680
Prior service cost	(2)	1	(1)
Amortization of net actuarial gain included in net income	(5,486)	1,414	(4,072)
Amortization of net prior service cost included in net income	3,170	(817)	2,353
Settlement included in net income	(120)	30	(90)
	517,157	(133,287)	383,870
Cash flow hedge:			
Gain for the year	349	(93)	256
Other Comprehensive Income	$501,454	$(133,380)	$368,074

(in thousands)	Year Ended December 31, 2020 Before-Tax Amount	Income Tax	After-Tax Amount
Foreign currency translation adjustments:			
Translation adjustments arising during the year	$ 31,642	$ –	$ 31,642
Pension and other postretirement plans:			
Actuarial gain	365,164	(98,594)	266,570
Prior service cost	(69)	19	(50)
Amortization of net actuarial loss included in net income	1,219	(329)	890
Amortization of net prior service cost included in net income	2,680	(724)	1,956
	368,994	(99,628)	269,366
Cash flow hedges:			
Loss for the year	(1,282)	293	(989)
Other Comprehensive Income	$399,354	$(99,335)	$300,019

The accumulated balances related to each component of other comprehensive income (loss) are as follows:

(in thousands, net of taxes)	Cumulative Foreign Currency Translation Adjustment	Unrealized Gain on Pensions and Other Postretirement Plans	Cash Flow Hedges	Accumulated Other Comprehensive Income
As of December 31, 2020	$ 9,754	$ 595,287	$(1,727)	$ 603,314
Other comprehensive income (loss) before reclassifications	(16,052)	385,679	(375)	369,252
Net amount reclassified from accumulated other comprehensive income	–	(1,809)	631	(1,178)
Net other comprehensive income (loss)	(16,052)	383,870	256	368,074
As of December 31, 2021	(6,298)	979,157	(1,471)	971,388
Other comprehensive income (loss) before reclassifications	**(48,340)**	**(540,079)**	**3,276**	**(585,143)**
Net amount reclassified from accumulated other comprehensive income	**–**	**(50,487)**	**393**	**(50,094)**
Net other comprehensive income (loss)	**(48,340)**	**(590,566)**	**3,669**	**(635,237)**
As of December 31, 2022	**$(54,638)**	**$ 388,591**	**$ 2,198**	**$ 336,151**

The amounts and line items of reclassifications out of Accumulated Other Comprehensive Income (Loss) are as follows:

(in thousands)	Year Ended December 31 2022	2021	2020	Affected Line Item in the Consolidated Statements of Operations
Pension and Other Postretirement Plans:				
Amortization of net actuarial (gain) loss	**$(70,833)**	$(5,486)	$ 1,219	(1)
Amortization of net prior service cost	**2,864**	3,170	2,680	(1)
Settlement gains	**–**	(120)	–	(1)
	(67,969)	(2,436)	3,899	Before tax
	17,482	627	(1,053)	Provision for income taxes
	(50,487)	(1,809)	2,846	Net of tax
Cash Flow Hedges				
	393	631	474	Interest expense
	–	–	13	Provision for income taxes
	393	631	487	Net of tax
Total reclassification for the year	**$(50,094)**	$(1,178)	$ 3,333	Net of tax

(1) These accumulated other comprehensive income components are included in the computation of net periodic pension and postretirement plan cost (see Note 15) and are included in non-operating pension and postretirement benefit income in the Company's Consolidated Statements of Operations.

18. CONTINGENCIES AND OTHER COMMITMENTS

Litigation, Legal and Other Matters. The Company and its subsidiaries are subject to complaints and administrative proceedings and are defendants in various civil lawsuits that have arisen in the ordinary course of their businesses, including contract disputes; actions alleging negligence, libel, defamation and invasion of privacy; trademark, copyright and patent infringement; violations of employment laws and applicable wage and hour laws; and statutory or common law claims involving current and former students and employees. Although the outcomes of the legal claims and proceedings against the Company cannot be predicted with certainty, based on currently available information, management believes that there are no existing claims or proceedings that are likely to have a material effect on the Company's business, financial condition, results of operations or cash flows. However, based on currently available information, management believes it is reasonably possible that future losses from existing and threatened legal, regulatory and other proceedings in excess of the amounts recorded could reach approximately $15 million.

In 2015, Kaplan sold substantially all of the assets of the KHE Campuses (KHEC) business to Education Corporation of America. In 2018, certain subsidiaries of Kaplan contributed the institutional assets and operations of KU to a new university: an Indiana nonprofit, public-benefit corporation affiliated with Purdue University, known as Purdue University Global. Kaplan could be held liable to the current owners of KU and the KHEC schools related to the pre-sale conduct of the schools, and the pre-sale conduct of the schools has been and could be the subject of future compliance reviews, regulatory proceedings or lawsuits that could result in monetary liabilities or fines or other sanctions. On May 6, 2021, Kaplan received a notice from the Department of Education (ED) that it would be conducting a fact-finding process pursuant to the borrower defense to repayment (BDTR) regulations to determine the validity of more than 800 BDTR claims and a request for documents related to several of Kaplan's previously owned schools. Beginning in July 2021, Kaplan started receiving the claims and related information requests. In total, Kaplan received 1,449 borrower defense applications that seek discharge of approximately $35 million in loans, excluding interest. Most claims received

are from former KU students. The ED's process for adjudicating these claims is subject to the borrower defense regulations including those finalized in 2022 and effective July 1, 2023, but it is not clear to what extent the ED will exclude claims based on the underlying statutes of limitations, evidence provided by Kaplan, or any prior investigation related to schools attended by the student applicants. Compared to the previous rule, the new rule in part, expands actions that can give rise to claims for discharge; provides that the borrower's claim will be presumed true if the institution does not provide any responsive evidence; provides an easier process for group claims; and relies on current program review penalty hearing processes for discharge recoupment. Under the rule, the recoupment process applies only to loans first disbursed after July 1, 2023; however, the discharge process and standards apply to any pending application regardless of loan date. Kaplan believes it has defenses that would bar any student discharge or school liability including that the claims are barred by the applicable statute of limitations, unproven, incomplete and fail to meet regulatory filing requirements. Kaplan expects to vigorously defend any attempt by the ED to hold Kaplan liable for any ultimate student discharges and has responded to all claims with documentary and narrative evidence to refute the allegations, demonstrate their lack of merit, and support the denial of all such claims by the ED. If the claims are successful, the ED may seek reimbursement for the amount discharged from Kaplan. If the ED initiates a reimbursement action against Kaplan following approval of former students' BDTR applications, Kaplan may be subject to significant liability. In November 2022 the Northern District of California approved the settlement agreement in the lawsuit *Sweet v. Cardona*. The Plaintiffs in that lawsuit claimed that the ED failed to properly consider and decide pending BDTR claims. As part of the settlement, the ED agreed to discharge loans of borrowers who attended 150 specific schools, including all schools formerly owned by Kaplan, and who had BDTR claims pending as of the June 22, 2022 settlement execution date. This discharge will likely cover each of the 1,449 applications the ED sent to Kaplan and to which Kaplan responded. The ED and the Court made clear that these discharges as part of a settlement are not determinations that the pending BDTR claims are valid and the fact of the settlement discharge cannot be used as evidence of any determination of wrongdoing by the institutions. However, despite the fact that the loans are discharged per the settlement, the ED may still attempt to separately adjudicate the associated BDTR claims and follow the regulatory process for seeking recoupment from the institutions for such claims. On October 27, 2022, the ED released a final rule that among other things, changes the Title IV definition of "Nonprofit" institution to generally exclude from that definition any institution that is an obligor on a debt owed to a former owner of the institution or that maintains a revenue-based service agreement with a former owner of the institution. The final rule has an effective date of July 1, 2023 and could subject Purdue Global to additional regulatory requirements.

In August 2018, Purdue University Global received an updated Provisional Program Participation Agreement (PPPA) from the ED which is necessary for continued participation in the federal Title IV programs after the change in ownership from Kaplan to Purdue. The PPPA expired on June 30, 2021 but was extended to June 30, 2022. In August 2022, Purdue University Global received an extended PPPA that is effective through June 30, 2024. Under the extended PPPA, among other restrictions, Purdue University Global must also report information related to known governmental investigations and student complaints on a quarterly basis to the ED.

In June 2021, the Committee for Private Education (CPE) in Singapore instructed Kaplan Singapore to cease new enrollments for three marketing diploma programs on both a full and part-time basis due to noncompliance with minimum entry level requirements for admission and to teach out existing students in these programs. On August 23, 2021, the CPE issued the same instructions with respect to the Kaplan Foundation diploma and four information technology diploma programs on both a full and part-time basis. In November 2021, the CPE issued the same instructions with respect to a further 23 full-time or part-time diploma programs. Kaplan Singapore successfully applied for re-registration of certain diploma and additional full-time and part-time programs in 2022. In May 2022, CPE also renewed Kaplan Singapore's registrations as a private education institution for a four year period expiring in 2026. In 2023, Kaplan Singapore will apply to renew the certification required for private education institutions to enroll international students and offer certain programs. As enrollments in diploma programs and undergraduate degree programs are not yet at levels existing prior to the regulatory action by the CPE in 2021, the impact of such regulatory actions will continue to have an adverse impact on Kaplan Singapore's revenues, operating results and cash flows in the future while enrollment levels stabilize.

Other Commitments. The Company's broadcast subsidiaries are parties to certain agreements that commit them to purchase programming to be produced in future years. At December 31, 2022, such commitments amounted to approximately $17.3 million. If such programs are not produced, the Company's commitment would expire without obligation.

19. BUSINESS SEGMENTS

Basis of Presentation. The Company's organizational structure is based on a number of factors that management uses to evaluate, view and run its business operations, which include, but are not limited to, customers, the nature of products and services and use of resources. The business segments disclosed in the Consolidated Financial Statements are based on this organizational structure and information reviewed by the Company's management to evaluate the business segment results. The Company has seven reportable segments: Kaplan International, Kaplan Higher Education, Kaplan Supplemental Education, Television Broadcasting, Manufacturing, Healthcare and Automotive.

The Company evaluates segment performance based on operating income before amortization of intangible assets and impairment of goodwill and other long-lived assets. The accounting policies at the segments are the same as described in Note 2. In computing operating income before amortization by segment, the effects of amortization of intangible assets, impairment of goodwill and other long-lived assets, equity in earnings (losses) of affiliates, interest income, interest expense, non-operating pension and postretirement benefit income, other non-operating income and expense items and income taxes are excluded. Intersegment sales are not material.

Identifiable assets by segment are those assets used in the Company's operations in each business segment. The investments in marketable equity securities and affiliates, and prepaid pension cost are not included in identifiable assets by segment. Investments in marketable equity securities are discussed in Note 4.

Education. Education products and services are provided by Kaplan, Inc. Kaplan International includes professional training and postsecondary education businesses largely outside the U.S., as well as English-language programs. KHE includes the results as a service provider to higher education institutions. Supplemental Education includes Kaplan's standardized test preparation, domestic professional and other continuing education businesses.

As of December 31, 2022, Kaplan had a total outstanding accounts receivable balance of $90.0 million from Purdue Global related to amounts due for reimbursements for services, fees earned and a deferred fee. Included in this total, Kaplan has a $19.4 million long-term receivable balance due from Purdue Global at December 31, 2022, related to the advance of $20.0 million during the initial KU Transaction.

Television Broadcasting. Television broadcasting operations are conducted through seven television stations serving the Detroit, Houston, San Antonio, Orlando, Jacksonville and Roanoke television markets. All stations are network-affiliated (except for WJXT in Jacksonville), with revenues derived primarily from sales of advertising time. In addition, the stations generate revenue from retransmission consent agreements for the right to carry their signals.

Manufacturing. Manufacturing operations include Hoover, a Thomson, GA-based supplier of pressure impregnated kiln-dried lumber and plywood products for fire retardant and preservative application; Dekko, a Garrett, IN-based manufacturer of electrical workspace solutions, architectural lighting, and electrical components and assemblies; Joyce/Dayton Corp., a Dayton, OH-based manufacturer of screw jacks and other linear motion systems; and Forney, a global supplier of products and systems that control and monitor combustion processes in electric utility and industrial applications.

Healthcare. Graham Healthcare Group provides home health, hospice and palliative services. GHG also provides other healthcare services, including nursing care and prescription services for patients receiving in-home infusion treatments, ABA therapy clinics, physician services for allergy, asthma and immunology patients, in-home aesthetics and healthcare software-as-a-service technology.

Automotive. Automotive includes six automotive dealerships in the Washington, D.C. metropolitan area, including Lexus of Rockville, Honda of Tysons Corner, Jeep of Bethesda, Ford of Manassas, which was acquired in December 2021, and Toyota of Woodbridge and Chrysler-Dodge-Jeep-Ram of Woodbridge, which were acquired in July 2022.

Other Businesses. Other businesses includes the following:

- Leaf Group, a consumer internet company, which was acquired in June 2021.
- Clyde's Restaurant Group owns and operates 11 restaurants and entertainment venues in the Washington, D.C. metropolitan area.
- Framebridge, a custom framing service company, which was acquired in May 2020.
- Code3 is a marketing and insights company that manages digital advertising campaigns.
- The Slate Group and Foreign Policy Group, which publish online and print magazines and websites; and three investment stage businesses, Decile, Pinna and City Cast. Other businesses also includes Megaphone, which was sold in December 2020, and CyberVista, which merged with another entity in October 2022 resulting in the deconsolidation of the subsidiary.

Corporate Office. Corporate office includes the expenses of the Company's corporate office, defined benefit pension expense, and certain continuing obligations related to prior business dispositions.

Geographical Information. The Company's non-U.S. revenues in 2022, 2021 and 2020 totaled approximately $776 million, $709 million and $642 million, respectively, primarily from Kaplan's operations outside the U.S. Additionally, revenues in 2022, 2021 and 2020 totaled approximately $448 million, $404 million, and $375 million, respectively, from Kaplan's operations in the U.K. The Company's long-lived assets in non-U.S. countries (excluding goodwill and other intangible assets), totaled approximately $477 million and $476 million at December 31, 2022 and 2021, respectively.

Restructuring. During 2020, Kaplan developed and implemented a number of initiatives across its businesses to help mitigate the negative revenue impact arising from COVID-19 and to re-align its program offerings to better pursue opportunities from the disruption. These initiatives include employee salary and work-hour reductions; temporary furlough and other employee reductions; reduced discretionary spending; facility restructuring to reduce its classroom and office facilities; reduced capital expenditures; and accelerated development and promotion of various online programs and solutions.

In 2020, Kaplan recorded restructuring costs related to severance, the exit of classroom and office facilities, and approved Separation Incentive Programs that reduced the number of employees at all of Kaplan's divisions.

In 2020, Code3 and Decile recorded restructuring costs in connection with a restructuring plan that included the exit of an office facility, an approved Separation Incentive Program to reduce the number of employees, and other cost reduction initiatives to mitigate the adverse impact of COVID-19 on advertising demand.

Restructuring related costs across all businesses in 2020 were recorded as follows:

(in thousands)	Kaplan International	Higher Education	Supplemental Education	Kaplan Corporate	Total Education	Other Businesses	Total
Severance	$ 4,366	$ –	$ 1,797	$ –	**$ 6,163**	**$ –**	**$ 6,163**
Facility related costs:							
Operating lease cost	2,905	3,451	3,586	–	**9,942**	**–**	**9,942**
Accelerated depreciation of property, plant and equipment	1,620	152	1,801	–	**3,573**	**–**	**3,573**
Total Restructuring Costs Included in Segment Income (Loss) from Operations [1]	**$ 8,891**	**$3,603**	**$ 7,184**	**$ –**	**$19,678**	**$ –**	**$19,678**
Impairment of other long-lived assets:							
Lease right-of-use assets	$ 3,976	$2,062	$ 4,005	$ –	**$10,043**	**$1,405**	**$11,448**
Property, plant and equipment	1,248	174	813	–	**2,235**	**86**	**2,321**
Non-operating pension and postretirement benefit income, net	1,100	2,233	8,566	883	**12,782**	**999**	**13,781**
Total Restructuring Related Costs	**$15,215**	**$8,072**	**$20,568**	**$883**	**$44,738**	**$2,490**	**$47,228**

(1) These amounts are included in the segments' Income (Loss) from Operations before Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets.

Total accrued restructuring costs at Kaplan was $1.2 million as of December 31, 2021.

In June 2020, CRG made the decision to close its restaurant and entertainment venue in Columbia, MD effective July 19, 2020 and recorded accelerated depreciation of property, plant and equipment totaling $5.7 million for the year ended December 31, 2020.

Company information broken down by operating segment and education division:

(in thousands)	Year Ended December 31		
	2022	**2021**	**2020**
Operating Revenues			
Education	**$1,427,915**	$1,361,245	$1,305,713
Television broadcasting	**535,651**	494,177	525,212
Manufacturing	**486,643**	458,125	416,137
Healthcare	**326,000**	223,030	198,196
Automotive	**734,185**	327,069	258,144
Other businesses	**416,084**	324,353	187,347
Corporate office	**–**	–	–
Intersegment elimination	**(1,985)**	(2,025)	(1,628)
	$3,924,493	$3,185,974	$2,889,121
Income (Loss) from Operations before Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets			
Education	**$ 99,103**	$ 69,892	$ 41,056
Television broadcasting	**207,319**	154,862	199,938
Manufacturing	**54,079**	36,926	40,427
Healthcare	**19,041**	29,912	30,327
Automotive	**34,633**	11,771	502
Other businesses	**(86,270)**	(76,153)	(72,915)
Corporate office	**(56,166)**	(59,025)	(51,978)
	$ 271,739	$ 168,185	$ 187,357
Amortization of Intangible Assets and Impairment of Goodwill and Other Long-Lived Assets			
Education	**$ 16,170**	$ 19,319	$ 29,452
Television broadcasting	**5,440**	5,440	5,440
Manufacturing	**20,372**	52,974	28,099
Healthcare	**3,776**	3,106	4,220
Automotive	**–**	–	6,698
Other businesses	**142,083**	9,971	13,041
Corporate office	**–**	–	–
	$ 187,841	$ 90,810	$ 86,950
Income (Loss) from Operations			
Education	**$ 82,933**	$ 50,573	$ 11,604
Television broadcasting	**201,879**	149,422	194,498
Manufacturing	**33,707**	(16,048)	12,328
Healthcare	**15,265**	26,806	26,107
Automotive	**34,633**	11,771	(6,196)
Other businesses	**(228,353)**	(86,124)	(85,956)
Corporate office	**(56,166)**	(59,025)	(51,978)
	$ 83,898	$ 77,375	$ 100,407
Equity in (Losses) Earnings of Affiliates, Net	**(2,837)**	17,914	6,664
Interest Expense, Net	**(51,177)**	(30,534)	(34,439)
Non-Operating Pension and Postretirement Benefit Income, Net	**197,939**	109,230	59,315
(Loss) Gain on Marketable Equity Securities, net	**(139,589)**	243,088	60,787
Other Income, Net	**33,500**	32,554	214,534
Income Before Income Taxes	**$ 121,734**	$ 449,627	$ 407,268

(in thousands)	Year Ended December 31 2022	2021	2020
Depreciation of Property, Plant and Equipment			
Education	**$34,114**	$ 32,113	$31,759
Television broadcasting	**12,294**	14,018	13,830
Manufacturing	**9,399**	9,808	10,333
Healthcare	**3,781**	1,313	1,665
Automotive	**3,709**	2,156	2,017
Other businesses	**9,392**	11,376	13,947
Corporate office	**608**	631	706
	$73,297	$ 71,415	$74,257
Pension Service Cost			
Education	**$ 8,934**	$ 9,357	$10,024
Television broadcasting	**3,554**	3,575	3,263
Manufacturing	**1,104**	1,282	1,424
Healthcare	**11,008**	561	543
Automotive	**22**	–	–
Other businesses	**2,073**	1,755	1,698
Corporate office	**5,872**	6,461	5,704
	$32,567	$ 22,991	$22,656
Capital Expenditures			
Education	**$46,878**	$100,780	$33,553
Television broadcasting	**5,832**	6,803	13,470
Manufacturing	**7,968**	7,190	8,034
Healthcare	**2,745**	3,671	2,481
Automotive	**3,606**	31,124	3,181
Other businesses	**15,352**	13,176	5,075
Corporate office	**21**	25	80
	$82,402	$162,769	$65,874

Asset information for the Company's business segments is as follows:

(in thousands)	As of December 31 2022	2021
Identifiable Assets		
Education	**$1,987,042**	$2,026,782
Television broadcasting	**431,084**	448,627
Manufacturing	**486,487**	486,304
Healthcare	**249,845**	194,823
Automotive	**427,221**	238,200
Other businesses	**475,583**	689,872
Corporate office	**70,567**	68,962
	$4,127,829	$4,153,570
Investments in Marketable Equity Securities	**609,921**	809,997
Investments in Affiliates	**186,419**	155,444
Prepaid Pension Cost	**1,658,046**	2,306,514
Total Assets	**$6,582,215**	$7,425,525

The Company’s education division comprises the following operating segments:

(in thousands)	Year Ended December 31		
	2022	**2021**	**2020**
Operating Revenues			
Kaplan international	**$ 816,239**	$ 726,875	$ 653,892
Higher education	**304,136**	317,854	316,095
Supplemental education	**301,625**	309,069	327,087
Kaplan corporate and other	**18,752**	14,759	12,643
Intersegment elimination	**(12,837)**	(7,312)	(4,004)
	$1,427,915	$1,361,245	$1,305,713
Income (Loss) from Operations before Amortization of Intangible Assets and Impairment of Long-Lived Assets			
Kaplan international	**$ 72,066**	$ 33,457	$ 15,248
Higher education	**24,031**	24,134	24,364
Supplemental education	**21,069**	36,919	19,705
Kaplan corporate and other	**(18,018)**	(24,715)	(18,266)
Intersegment elimination	**(45)**	97	5
	$ 99,103	$ 69,892	$ 41,056
Amortization of Intangible Assets	**$ 16,170**	$ 16,001	$ 17,174
Impairment of Long-Lived Assets	**$ –**	$ 3,318	$ 12,278
Income (Loss) from Operations			
Kaplan international	**$ 72,066**	$ 33,457	$ 15,248
Higher education	**24,031**	24,134	24,364
Supplemental education	**21,069**	36,919	19,705
Kaplan corporate and other	**(34,188)**	(44,034)	(47,718)
Intersegment elimination	**(45)**	97	5
	$ 82,933	$ 50,573	$ 11,604
Depreciation of Property, Plant and Equipment			
Kaplan international	**$ 23,270**	$ 21,472	$ 19,562
Higher education	**4,107**	3,658	3,082
Supplemental education	**6,344**	6,544	8,724
Kaplan corporate and other	**393**	439	391
	$ 34,114	$ 32,113	$ 31,759
Pension Service Cost			
Kaplan international	**$ 270**	$ 291	$ 433
Higher education	**3,842**	4,440	4,150
Supplemental education	**4,114**	3,814	4,207
Kaplan corporate and other	**708**	812	1,234
	$ 8,934	$ 9,357	$ 10,024
Capital Expenditures			
Kaplan international	**$ 39,206**	$ 92,532	$ 24,085
Higher education	**1,398**	3,629	3,234
Supplemental education	**4,749**	4,297	6,030
Kaplan corporate and other	**1,525**	322	204
	$ 46,878	$ 100,780	$ 33,553

Asset information for the Company’s education division is as follows:

(in thousands)	As of December 31	
	2022	**2021**
Identifiable Assets		
Kaplan international	**$1,479,833**	$1,493,868
Higher education	**174,033**	187,789
Supplemental education	**268,499**	286,877
Kaplan corporate and other	**64,677**	58,248
	$1,987,042	$2,026,782

GRAHAM HOLDINGS COMPANY IN BRIEF

Graham Holdings Company (NYSE:GHC) is a diversified holding company whose operations include educational services; television broadcasting; online, podcast, print and local TV news; home health and hospice care; and manufacturing. The Company also owns automotive dealerships, restaurants, a custom framing service company, a marketing solutions provider, a customer data and analytics software company, and a consumer internet company.

GRAHAM HOLDINGS COMPANY
ghco.com

Education

Kaplan
kaplan.com

Kaplan North America
Kaplan International

TELEVISION BROADCASTING

Graham Media Group

KPRC–Houston (NBC affiliate)
click2houston.com
KPRC2+
MeTV on KYAZ
Heroes & Icons
StartTV
Dabl
GetTV

WDIV–Detroit (NBC affiliate)
clickondetroit.com
Local4+
ThisTV
MeTV
CoziTV

WKMG–Orlando (CBS affiliate)
clickorlando.com
News6+
Dabl
CoziTV
StartTV
Decades

KSAT–San Antonio (ABC affiliate)
Ksat.com
KSAT+
MeTV
Movies!
Heroes & Icons
StartTV
QVC1
QVC2

WJXT–Jacksonville (Independent)
News4jax.com
News4JAX+
StartTV
Dabl

WCWJ–Jacksonville (CW affiliate)
yourjax.com
Bounce
GetTV
Movies!

WSLS–Roanoke (NBC affiliate)
wsls.com
GetTV
MeTV
StartTV
Movies!

Graham Digital
grahamdigital.com

SocialNewsDesk
socialnewsdesk.com

MANUFACTURING

Hoover Treated Wood Products, Inc.
frtw.com

Dekko
dekko.com

Joyce/Dayton Corp.
joycedayton.com

Forney Corporation
forneycorp.com

AUTOMOTIVE

Automotive Group
ourismanhondaoftysonscorner.com
ourismanjeep.com
ourismanlexusofrockville.com
ourismanfordofmanassas.com
carcaretogo.com
toyotaofwoodbridge.com
ourismancdjrofwoodbridge.com

HEALTHCARE

Graham Healthcare Group
grahamhealthcaregroup.com

Residential Home Health and Hospice
residentialhealthcaregroup.com

Graham Healthcare Capital
grahamhealthcarecapital.com

OTHER BUSINESSES

Leaf Group
leafgroup.com

Society6
society6.com

Deny Designs
denydesigns.com

Saatchi Art
saatchiart.com

The Other Art Fair
theotherartfair.com

Well+Good
wellandgood.com

LIVESTRONG.com
livestrong.com

Hunker
hunker.com

OnlyInYourState
onlyinyourstate.com

eHow
ehow.com

Clyde's Restaurant Group
clydes.com

Framebridge
framebridge.com

Code3
code3.com

Decile
decile.com

The FP Group

Foreign Policy
foreignpolicy.com

Pinna
pinna.fm

The Slate Group
slate.com

CityCast
citycast.fm

CORPORATE DIRECTORY

BOARD OF DIRECTORS

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Chairman of the Board

Timothy J. O'Shaughnessy (3, 4)
President and Chief Executive Officer

Tony Allen, PhD (2)
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Danielle Conley
Partner, Latham & Watkins

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Chief Executive Officer,
Markel Corporation

Anne M. Mulcahy (2, 4)
Retired Chairman of the Board and
Chief Executive Officer, Xerox Corporation

G. Richard Wagoner, Jr. (1)
Retired Chairman of the Board and Chief
Executive Officer, General Motors Corporation

Katharine Weymouth (2, 3)
Former Chief Executive Officer and Publisher,
The Washington Post

Committees of the Board of Directors
(1) *Audit Committee*
(2) *Compensation Committee*
(3) *Finance Committee*
(4) *Executive Committee*

OTHER COMPANY OFFICERS

Jacob M. Maas
Executive Vice President

Andrew S. Rosen
Executive Vice President
Chairman and Chief Executive Officer,
Kaplan

Wallace R. Cooney
Senior Vice President–Finance
Chief Financial Officer

Nicole M. Maddrey
Senior Vice President, General Counsel
and Secretary

Michael Baker
Vice President–Risk Management

Emily D. Firippis
Assistant Treasurer

Matthew R. Greisler
Vice President, Treasurer

Stacey Halota
Vice President–Information Security and Privacy

Cherie Kummer
Vice President–Tax

Pinkie D. Mayfield
Vice President–Corporate Affairs
Chief Communications Officer

Jarvis Obispo
Vice President–Corporate Audit Services

Marcel A. Snyman
Vice President–Chief Accounting Officer

Sandra M. Stonesifer
Vice President–Chief Human Resources
Officer

Elaine Wolff
Vice President, Deputy General Counsel
and Assistant Secretary

2023 ANNUAL MEETING

The 2023 Annual Meeting of Shareholders will be held on Thursday, May 4, at 8:30 a.m.

The Hamilton
600 14th Street N.W.
Washington, DC 20005

STOCK TRADING

Graham Holdings Company Class B common stock is traded on the New York Stock Exchange under the symbol GHC. Class A common stock is not traded publicly.

STOCK TRANSFER AGENT AND REGISTRAR

General shareholder correspondence:
Computershare
PO Box 505000
Louisville, KY 40233

Transfers by overnight courier:
Computershare
462 South 4th Street, Suite 1600
Louisville, KY 40202

SHAREHOLDER INQUIRIES

Communications concerning transfer requirements, lost certificates, dividends and changes of address should be directed to Computershare Investor Services:

Tel: (800) 446-2617
(781) 575-2723
TDD: (800) 952-9245

Questions also may be sent via the website:
www-us.computershare.com/investor/Contact.

FORM 10-K

The Company's Form 10-K annual report to the Securities and Exchange Commission is part of this annual report to shareholders. All of the Company's SEC filings are accessible from the Company's website, ghco.com.

COMMON STOCK PRICES AND DIVIDENDS

High and low sales prices during the past two years were:

	2022		2021	
Quarter	**High**	**Low**	**High**	**Low**
January–March	$675	$559	$634	$524
April–June	$635	$534	$685	$568
July–September	$613	$526	$674	$571
October–December	$664	$535	$631	$548

Class A and Class B common stock participate equally as to dividends. Quarterly dividends were paid at the rate of $1.58 per share in 2022 and $1.51 per share in 2021, and $1.45 per share in 2020. At January 31, 2023, there were 27 Class A and 322 Class B registered shareholders.

Design: Vivo Design, Inc. Printing: Mount Vernon Printing Company

G|H GRAHAM HOLDINGS

GRAHAM HOLDINGS COMPANY
1300 NORTH 17TH STREET
SUITE 1700
ARLINGTON, VA 22209

703 345 6300
GHCO.COM