



**2020 DERECHO**

# Business Storm Loss Survey Report



CEDAR RAPIDS  
**ECONOMIC  
DEVELOPMENT**

FIVE SEASONS. INFINITE SUCCESS.

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# Introduction



Let me begin by first extending wishes from the City of Cedar Rapids for the continued safety and wellbeing of local businesses, their employees and the entire community. If this year has been anything, then it has been full of surprising challenges. Not the least of these was the sudden, high-speed windstorm that moved through our area on Monday, August 10, 2020

The scope of impact during and following the derecho was widespread and unprecedented. Unfortunately, during and after the storm, loss of electric power and communications services were a common occurrence throughout the Cedar Rapids community. Structural damage to buildings, public facilities, infrastructure, and countless instances of personal property losses were commonplace. Adverse impacts to the transportation system such as road closures, loss of traffic signals, and a suspension of transit service presented still other challenges. As quickly as the storm arrived, response and recovery work began with 962 calls for assistance received by 911 dispatchers during the storm — including reports of a number of structural collapses, fires, gas leaks, welfare checks, traffic accidents and traumatic injuries.

In the days following the derecho, City staff worked quickly to respond to the needs of the business community. The City created a storm damage information page on the City website. Economic Development Services staff provided direct email updates to companies listed in our marketing database. Our staff also worked closely with businesses to help them address business interruption as well as provide assistance to their employees at neighborhood resource centers.

Also, by mid-August, City staff deployed an economic and financial loss measurement tool to collect data about the scale of disruption in the business community. Economic recovery is a long-term process, and understanding the size and scale of the disaster is an important first step. This review supports the overall recovery process by addressing impacts using the most efficient timeline and resources.

The benefits of effective post-disaster analysis are enormous: In no small part, this is because a strong recovery effort leaves the community with improved assets, making it more resilient than before the disaster. It is for this reason that we are filled with a sense of optimism for everything that has been done already in response to the challenges of 2020. The safety and cohesion of our community make Cedar Rapids a great place to live, work and invest — something those of us already here have known for a long time.

In everything the City does, we make service to our residents and businesses the highest priority. Our continued efforts, leveraged with public-private partnerships, will help us achieve a rapid recovery that will leave Cedar Rapids stronger than ever. Please feel free to contact me with your thoughts and observations about how we can move forward stronger, together.

Best Regards,

A handwritten signature in black ink that reads "Jeff Pomeranz". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

**Jeff Pomeranz**  
City Manager



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# Executive Summary

The City of Cedar Rapids has an established practice of measuring the economic cost of local disaster events. The Economic Development Services Division, within the City Manager's Office, maintains capability for data collection from local businesses, and across industries, to provide insight into needs specific to each disaster recovery effort. The City then uses this type of primary information to help identify community-level economic recovery priorities.

Outreach to Cedar Rapids businesses began immediately in the days following the derecho. Economic Development Services staff contacted companies that had previously participated in the City's business retention program. The purpose of initial outreach was to check operational status and determine if there were any immediate response needs where the City would be able to play a role in assisting. Consistently, businesses reported initial needs were lack of power, debris removal and disruption of communications services (broadband).

By mid-August, City Economic Development Services had launched its storm loss questionnaire. A direct email message notified Cedar Rapids businesses about the survey, and a wide cross-section of companies were contacted through use of the City's marketing database. This list includes both large employers as well as small businesses. Additionally, economic development partner organizations were asked to share information about the loss survey with their members or clients. Economic Development staff then provided reminders as needed.

The City's storm loss questionnaire serves as an attempt to compile reports of losses from a large, representative set of companies in Cedar Rapids. It is not a survey in the traditional sense but instead functions as an attempt to document an estimate of minimum size and scale of the disaster by counting business losses. Results are reported in aggregate at the community level and do not reflect figures from a particular establishment or industry.

Over one hundred individual businesses contributed information used in the preparation of this report. A little more than half of the businesses responding to the survey were in the service and retail sector with approximately 28% of the remaining businesses in manufacturing. For the purposes of analysis, this report will present results for the entire business community as a whole unless otherwise specified.

Additionally, it is worth noting that the August 10th Derecho occurred at a point in time when many local businesses were already working through a period of challenging disruptions caused by the U.S. COVID-19 outbreak. It is no surprise perhaps that a high percentage of total respondents to the City's derecho storm loss survey were retail, dining and food service establishments, as those industries had already been hit particularly hard by adverse impacts in the beginning of 2020.



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# Reporting Summary

Total derecho losses across all reporting categories exceeds **\$133.3 million** in costs for Cedar Rapids based businesses.

The largest single category of loss is structural damage at **\$69.3 million** in damage to structures and real property.

Missed sales account for **\$41.4 million** in lost revenue.

Unpaid wages accounted for over **\$9.1 million** in losses.

When taken together, damage to facilities and real property plus lost sales and wages account for **90% of total derecho related costs and losses** for Cedar Rapids businesses.



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**Of those companies responding, half indicated storm damage and losses would be covered by insurance.**

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Around **55%** of survey responses indicated no need for additional working capital due to derecho related business interruption.

In total, around **20% of establishments** consulted indicated the possibility of a **short-term funding challenge** within 4 to 6 months.

The percentage of businesses anticipating a funding challenge increases to about **one-third** when looking at **service & retail establishment segments alone**.

Also, **3 out of 10 firms** responded that recession and adverse disaster impacts were a contributing factor in the need to take out more debt in 2020.

About **40%** of businesses in Cedar Rapids experienced closure for more than one day but less than a week, while **55%** closed for between one to two weeks.

The majority of the remaining **5% of companies** closed for only one day.

**Less than 1% of businesses** responding to the questionnaire were unaffected and remained open throughout the disaster event.

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**A strongly positive finding of the study is that 85% of businesses responding to the questionnaire plan no further staffing reductions in 2020.**

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**More than 60% of companies** responding had an average to positive impression of Internet Service Provider (ISP) quality of service following the derecho storm event, with 37% of all responding rating broadband higher than average.





## ECONOMIC LOSS ESTIMATE

As noted previously, the derecho loss estimate for Cedar Rapids presented here seeks to compile reports from individual Cedar Rapids firms. Consequently, this method functions as a count of reports voluntarily disclosed by companies willing to participate in the data collection project. The project intends to document a minimum, verified scale of loss for Cedar Rapids businesses stemming from the derecho event.

In Q4 2020, many companies that have even moderate losses are still working through the insurance claims process weeks and months after the event. Other businesses are unable to disclose information for a variety of reasons. Therefore, the information summarized here should be viewed as representative of the scale of losses experienced but not inclusive of data from every business establishment within the City.

Information contained in the loss estimate figures excludes residential and public sector losses. Those losses are estimated separately as part of the emergency management process. By undertaking a City business loss survey, the local economic development process benefits from readily available data on total business losses at the community level from a single source. The availability of this type of information helps to address an important gap area where information might not otherwise be accessible.

The storm loss questionnaire developed by the Economic Development Services Division intended to measure losses across a number of primary areas:

- ▶ **Damage to property and real structures**

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- ▶ **Damage to machinery and equipment**

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- ▶ **Lost or damaged inventory**

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- ▶ **Costs associated with repair, mitigation and reopening activities**

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- ▶ **Missed sales**

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- ▶ **Lost wages**

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- ▶ **Additional debt or working capital required due to storm impacts**

Within these categories, financial losses were those costs where a specific dollar amount would be measured for the accounting period, while economic losses encompassed opportunity cost (missed revenues) due to business interruption caused by the storm. Total loss figures reflect all losses in aggregate across those categories identified.

**TABLE 1** SUMMARY AUGUST 2020 MIDWEST DERECHO REPORTED BUSINESS LOSSES IN CEDAR RAPIDS, IOWA

Damages to structures/real property	\$69,360,465
Damage to machinery and equipment	\$5,927,141
Damage to office supplies and inventory	\$3,147,743
Cost of repairs, replacement and contractors	\$3,822,780
Other reopening costs	\$489,680
Lost sales volume	\$41,473,778
Lost payroll	\$9,166,133
Other misc. losses	\$2,165,730
<b>TOTAL</b>	<b>\$133,387,720</b>

Source: City of Cedar Rapids, Economic Development Services Division (2020)

As the table shows, the largest categories of business losses resulting from the derecho were impacts to real property or structures, lost sales and lost payroll. Almost 90% of total business losses were attributable to these three categories alone. However, the extent of damages varied widely among different types of businesses with the absolute range of impact varying from negligible amounts to millions of dollars.

Furthermore, using questionnaire data it is possible to produce a highly generalized estimate of additional structural and real property losses for Small and Medium-Sized Enterprises (SMEs) in the greater Cedar Rapids area. Approximately 60% of small businesses participating in the survey reported losses with a median value of \$8,000 per establishment. Excluding large employers and small businesses already reporting losses via the questionnaire, and assuming roughly 60% of small businesses had property impacts, about 4,100 payroll establishments in Linn County would have experienced a loss.<sup>1</sup> Assuming a median loss of \$8,000 per business, then there would be a minimum \$32.8 million in additional business related losses for SMEs in and around Cedar Rapids. This figure is a rough estimate, based on current best available data, and should only be utilized within the local planning process.<sup>2</sup>

Reported and estimated losses across all categories account for a minimum total loss figure of \$166.2 million. At the time of publication of this report in late 2020, many companies were still working through the claims process, and lack of data availability served as a factor that limited data collection through the storm questionnaire tool. As such, it is highly probable that the scale of reported losses will only grow, and the figures presented in this report should be viewed as an initial attempt to document a minimum level of loss to businesses in Cedar Rapids, Iowa.

<sup>1</sup> EMSI, 2020.3

<sup>2</sup> Note: Several high value loss reports from small businesses in Cedar Rapids outside of the area of interstate commerce companies were not included to produce the median estimate. These values represented outliers from capital-intensive industries and were not to be representative typical loss reports.

## ADDITIONAL FINDINGS

A total of 111 loss questionnaires were received as part of this project. Large employers in Cedar Rapids comprised 37% of the total sample size with Small and Medium-Sized Enterprises (SMEs) providing the balance of responses. The project sought to contact a representative cross-section of businesses in Cedar Rapids, consisting of firms in various sectors, industries and businesses of all sizes.

### Types of businesses responding to the storm loss questionnaire are as follows:

Services (Office): **33%**

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Retail: **28%**

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Industrial (Manufacturing): **28%**

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Nonprofits: **7%**

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Wholesale: **3%**

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While much of the data collection effort focused on obtaining information on economic and financial loss figures, the questionnaire has been able to highlight a number of positive factors in at work in the local recovery process. By far, the most encouraging finding is the comparative level of low impact on employment. The questionnaire inquired whether companies planned any layoffs or job reductions in 2020. Only 15% of companies providing a response indicated changes to staffing were likely. Furthermore, the survey asked companies to provide a number of jobs likely to be negatively impacted as a result of the derecho, but the number was low — much less than 75 positions. Another positive at the community level would be the very high number of firms that anecdotally reported having the ability to continue to pay employees despite lost production time.

Without a doubt, 2020 has been a challenging time for business on multiple fronts. It is perhaps no surprise that about 3 in 10 companies participating in the storm loss survey reported a need to take on additional debt in the current fiscal year. In total, more than half (55%) of companies did not identify any working capital challenges relating to their business. However, about 21% of businesses overall identified less than 4 months of working capital available, while that figure increases to 33% when considering retail and services businesses. Given existing COVID-19 disruption, service and retail businesses appear especially hard hit financially by the derecho.

Regarding insurance, approximately half of the businesses providing loss estimates expected some type of reimbursement through existing insurance policies. Overall, economic development staff received fewer questions about insurance from the business community at large than during past flood disaster events in Cedar Rapids.

Finally, lost production time was a major factor accounting for economic losses (opportunity costs) of missed sales and unpaid wages. It is fair to say that loss of electric power, debris, communications and internet were all contributing factors to most reporting a significant period of business interruption, typically lasting between one and two weeks. At the opposite end of the scale of impact, only a very small number of companies reported no impact from the derecho on operations — less than 1% of companies remained open and 4% were closed for only one day. That said, companies responding with a summary of losses generally held a favorable view of broadband service throughout the storm event with 60% of respondents indicating level and quality of service was in line with or exceeded expectations during the period of storm impact.

## ANALYSIS

The August 2020 Midwest Derecho now figures as the most costly extreme thunderstorm on record in the United States.<sup>3</sup> Official NOAA cost estimates place total damages for the storm at the high end from \$7.5 billion to \$10 billion. Iowa's official disaster declaration request included an initial estimate of \$3.8 billion in agricultural losses alone.<sup>4</sup> In particular, NOAA's National Centers for Environmental Information damage estimate also highlights adverse impacts to homes, businesses and vehicles in Cedar Rapids, Iowa. Some additional perspective on the severity of the recent derecho may also be found in the fact there have only been 126 severe thunderstorms producing costs in excess of \$1 billion since 1980.<sup>5</sup>

Business losses due to convective storms are an all too common occurrence across the United States each year, accounting for 80% of monetary losses due to natural catastrophes. The Insurance Industry Institute (III) identifies thunderstorms as the leading cause of insured losses due to natural catastrophes nationwide.<sup>6</sup> According to III, in 2019, the U.S. incurred approximately \$20 billion in insured losses from impacts relating to severe storms. When viewed from this perspective, cost estimates for August 2020 Midwest derecho damages equal as much as 50% of all insured natural disaster losses witnessed in the United States during all of 2019.

Separate from tropical cyclones and tornados, storm damage resulting from conditions of sudden or sustained high winds (above 60 mph) alone constitute a subset of overall losses resulting from thunderstorms. A 2010 study from the University of Illinois estimates annual losses as a result of wind storm impacts to be approximately one-quarter of total losses which result from convective storm systems.<sup>7</sup> Primary categories of damage include losses of personal and real property as well as damage to vital infrastructure such as electric distribution and transmission systems.<sup>8</sup>

Finally, it useful to highlight the fact that the frequency and intensity of damage caused by thunderstorms varies widely over time. A recent study conducted by Munich Reinsurance Company (Munich RE) showed total insured losses due to natural disasters in 2018 were approximately half the 2019 total dollar level.<sup>9</sup> Furthermore, insured losses due to convective storms in the U.S. have ranged between \$14 billion and \$111 billion since 2010. On average, storm losses have amounted to a median level of \$23.7 billion per year. In comparison, losses and damages caused by tropical cyclones making landfall in the United States in 2019 caused \$1.9 billion in damage or about 7.5% of total losses due to natural catastrophes.

When reviewing derecho costs and impacts found in this report, it becomes clear that forward looking perspective should not underestimate the likelihood of extreme costs and volatility of outcomes associated with future weather related natural disasters of all types. In this context, one of the most effective, long-term mitigation actions any local government can take is to continue to strengthen and diversify the local tax base. Taking action to support the feasible provision of infrastructure and utility services within planned growth areas, combined with economic development policy supporting increase in the number of businesses and jobs present in the community, helps to sustain the financial resources necessary to effectively manage the cost of any future natural disasters. High quality growth also adds to public facility and public service capacity to help with future disaster recovery as well.

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<sup>3</sup> Henson, Bob. (October 17, 2020) *Iowa derecho in August was most costly thunderstorm disaster in U.S. history*, Washington Post, [retrieved online](#).

<sup>4</sup> Eller, Donnelle. (August 17, 2020) *Iowa estimates that derecho damage to homes, farms will be close to \$4 billion. Will it go higher?* Des Moines Register, [retrieved online](#).

<sup>5</sup> NOAA, National Centers for Environmental Information (2020) *Billion Dollar Weather and Climate Disasters: Events*, [retrieved online](#).

<sup>6,9</sup> Insurance Industry Institute (2020) *Facts & Statistics: Natural Catastrophes*, [retrieved online](#).

<sup>7</sup> Changnon, Stanley. (2010) *An Atlas of Windstorms in the United States and Their Impacts*, [retrieved online](#).

<sup>8</sup> *Ibid.*, 1.





## CONCLUSION

Post-disaster economic recovery consists of those activities that fit within rebuilding and reinvesting broadly across a community — in both the public and private sectors. During recovery from a natural disaster, it is typical to see existing assets improved or hardened against similar disaster risks, making a positive contribution toward resiliency to all-hazards in a place. Assessing the scale of a disaster's financial and economic costs is a necessary first step. It helps support the effectiveness of the recovery process and shortens the time frame necessary to address damages.

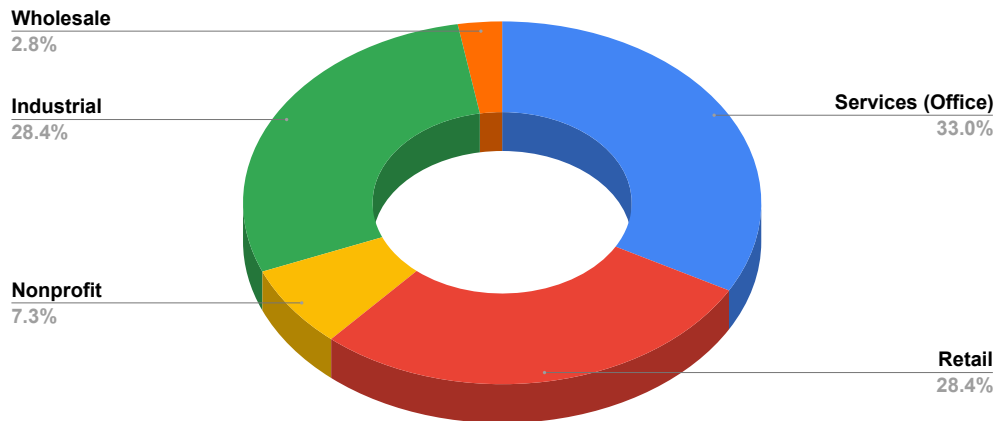
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# Appendix:

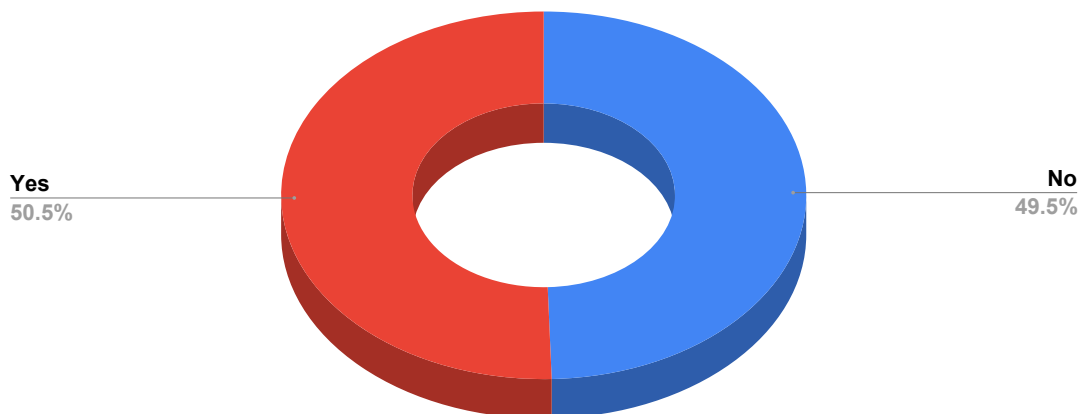
## Questionnaire Response Data Series

**FIGURE 1** What type of business or organization do you operate?

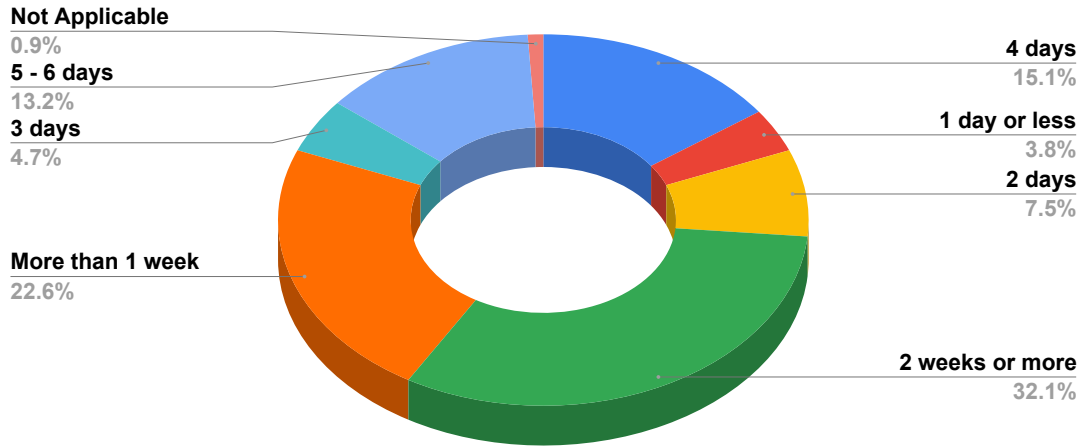


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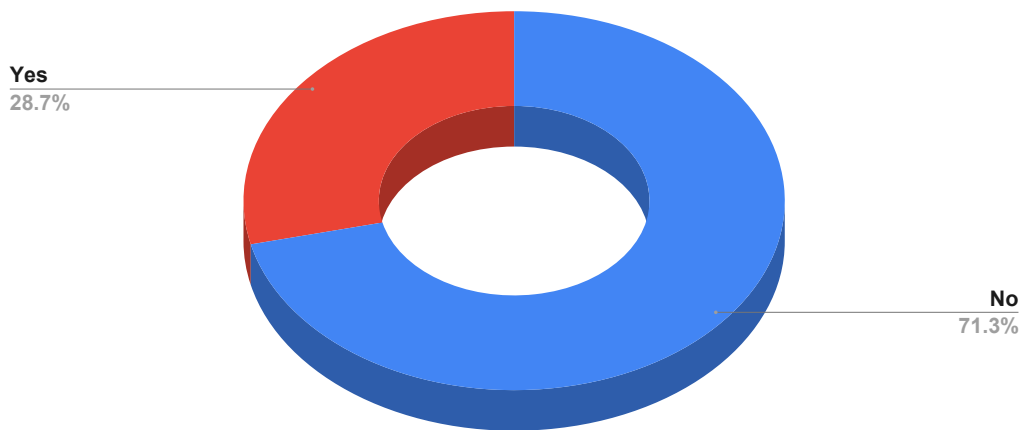
**FIGURE 2** Do you anticipate receiving any payments for storm losses or damages through insurance?



**FIGURE 3** Estimate of days lost due to derecho disaster event:

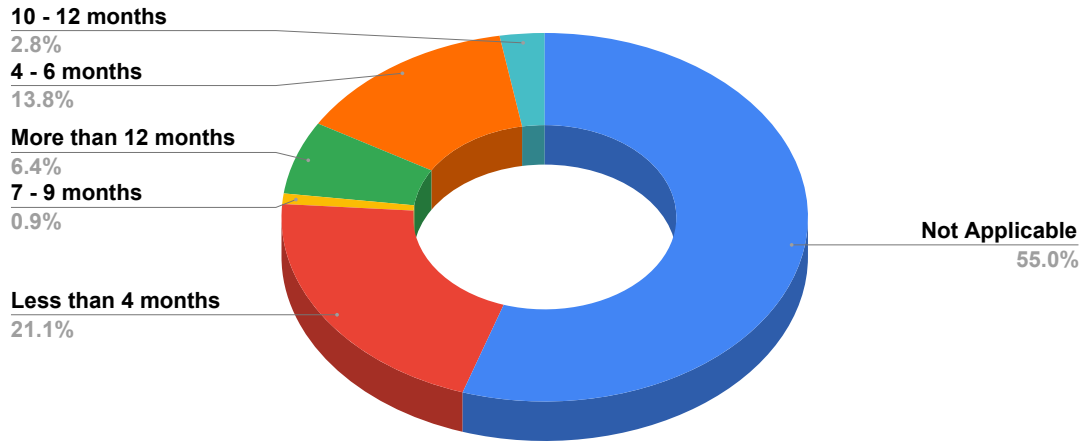


**FIGURE 4** Is your firm taking on additional debt in 2020?

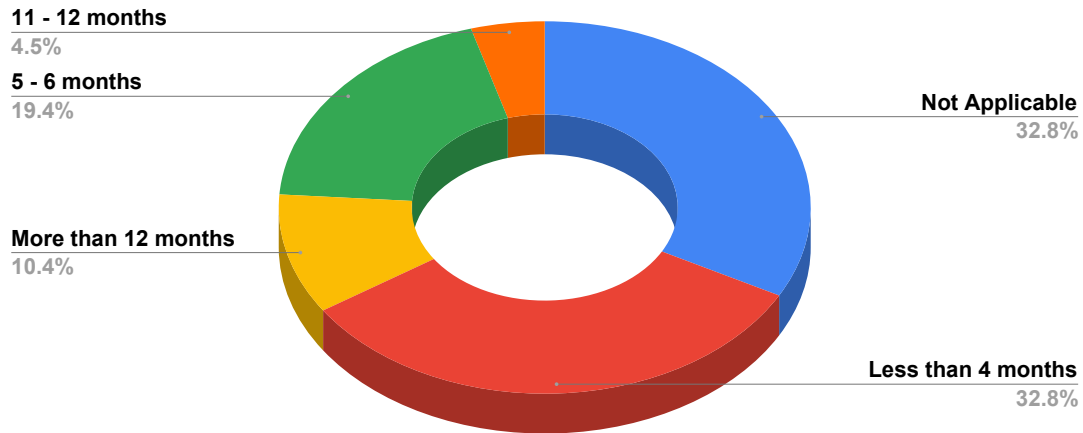




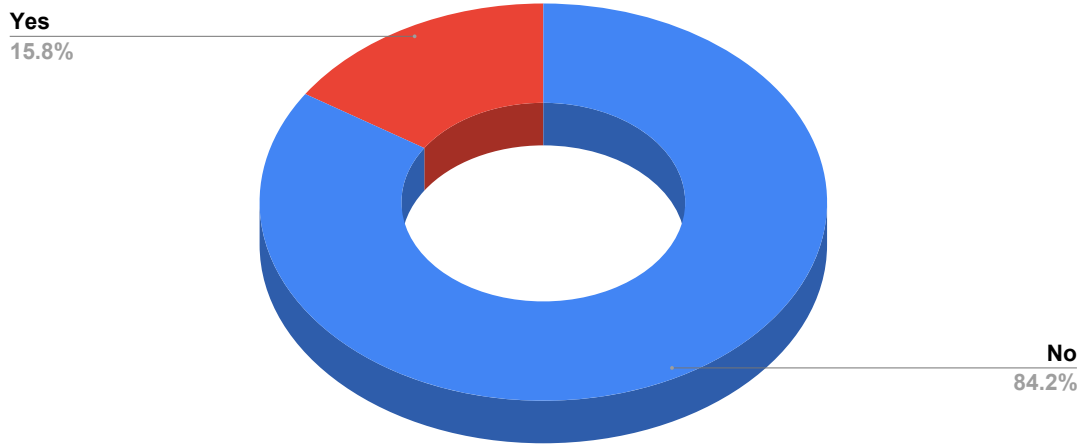
**FIGURE 5** How many months do you expect to have adequate working capital to keep your business going?



**FIGURE 6** Number of months service and retail establishments expect to have adequate working capital:



**FIGURE 7** Is your company planning to eliminate any jobs in 2020?



**FIGURE 8** Business satisfaction with broadband level and quality of service following derecho:

