

**April 2020**

**COVID-19 IMPACTS TO PROPANE HOME HEATING AND RECOMMENDATIONS  
AS DIRECTED BY EXECUTIVE ORDER D 2020 012**

**I. Executive Summary**

In March of 2020, Governor Polis issued [EXECUTIVE ORDER D 2020 012](#) which directed the Colorado Energy Office (CEO) to work with providers, trade associations, and consumers of propane heating across the state to evaluate impacts related to COVID-19 and to report relevant recommendations to the Office of the Governor to mitigate the impacts related to COVID-19.

CEO convened and collaborated with a workgroup of representatives from the Colorado Department of Health and Human Services, Colorado State University, the Colorado Propane Gas Association, Energy Outreach Colorado and the National Weather Service on how best to evaluate the impacts related to COVID-19 on Coloradoans' ability to pay for propane home heating. The workgroup decided to perform this evaluation through a combination of information gathering methods. The workgroup developed surveys of marketers and consumers of propane for home heating in Colorado to assess the impacts of COVID-19 on these groups. To give additional context to the survey responses, relevant census data also was compiled along with temperature forecasts from the National Weather Service. The result of this effort is a set of recommendations and findings to the Office of the Governor on the impacts and potential mitigation strategies for leading Colorado propane consumers through the COVID-19 pandemic.

**Recommendations are as follows:**

1. Continue to utilize existing resources and eligibility of Colorado's Low Income Energy Assistance Program (LEAP) and Energy Outreach Colorado (EOC) to mitigate impacts of COVID-19 on Colorado's residential propane customers.
2. Assist with the marketing of these assistance programs through the State, county governments and propane marketers. In particular through these agencies and resources: 1-866-HEAT-HELP - 1-866-432-8435, DOLA and OnwardCO.
3. Message to the propane marketing community through the Colorado Propane Gas Association recommendation to use payment plans for customers who are current on their accounts and cannot afford to fill their tanks due to the COVID-19 pandemic.

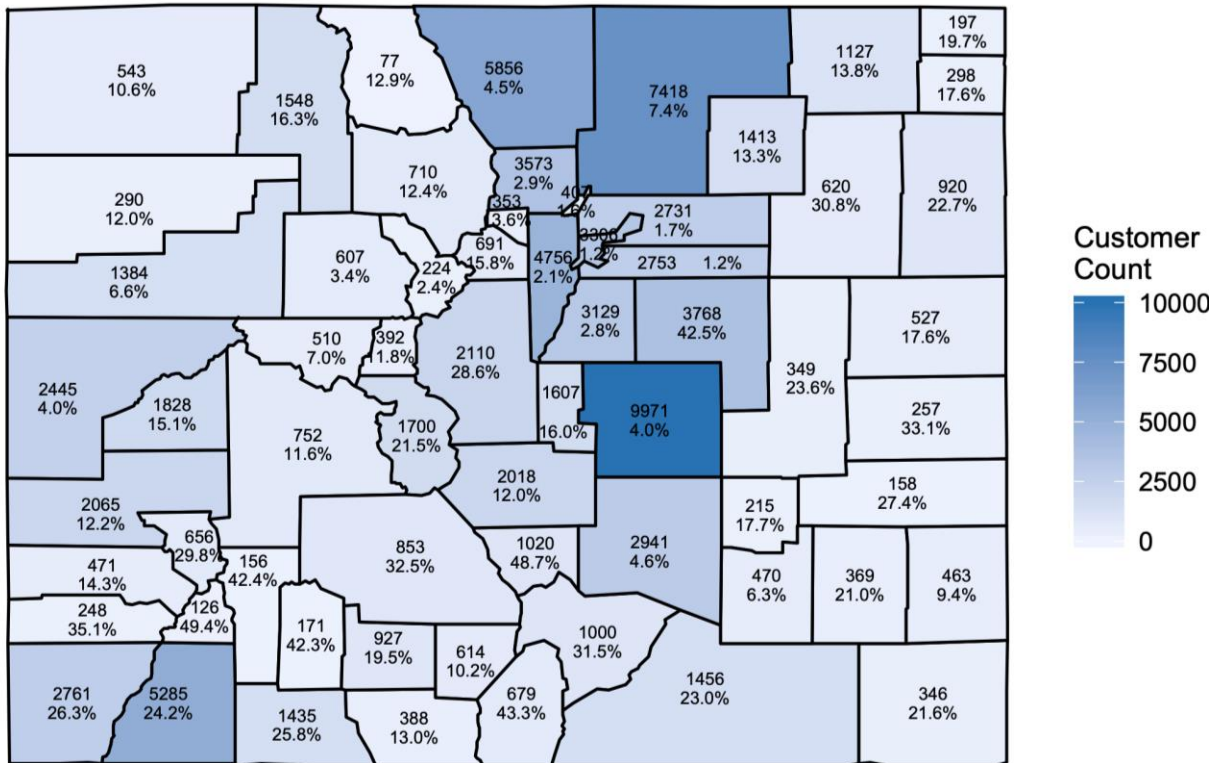
4. Prioritize outreach in Jackson, Weld, El Paso, Garfield, Pitkin, Eagle, Mesa, Otero, Huerfano, Costilla, Las Animas, Montezuma, and La Plata counties which are likely to experience greater economic impacts and colder temperatures through June 2020.
5. For estimating impacts, the base cost of propane that will be needed until the end of the heating season, on a per household basis, is between \$200 to \$600. The marketers and LEAP and EOC client surveys identified between 1000-2000 households are in need of immediate assistance. The actual need is likely higher.
6. Authorize the CEO to continue to monitor the impacts of the COVID-19 pandemic on Coloradoans' energy access. Many of COVID-19's economic and social disruptions are forecasted to be cumulative and ongoing.
7. Should additional stimulus funding come to Colorado, consider targeting funds through existing low-income energy efficiency programs toward propane conversion to improve the affordability and consumer protection for these customers.

## **II. Summary of Findings**

The findings from the two surveys, census data, and climate forecasts are presented here:

- A. Surveyed propane marketers responded that due to the COVID-19 pandemic, they expect to see cancelled orders and delayed payments in May and June of 2020. This is due to the fact that customers order and store 1-2 months of propane at a time, so there will be a time lag before customers' economic hardships are visible to propane marketers.
- B. Surveyed propane marketers indicated that between 1,000-2,000 of their customers, mostly concentrated in the Western Slope and Southern Plains regions of Colorado, have already expressed economic hardship since the beginning of the COVID-19 pandemic.
- C. Propane marketers surveyed have minimum delivery quantities in the range of 50-200 gallons.
- D. The surveyed propane marketers indicated that they support expanding the funding and reach of Colorado's LEAP and EOC as a near-term means to enable impacted customers to pay for propane home heating due to COVID-19.
- E. The propane home heating consumer survey predominantly captured lower income individuals and 57.4% of those individuals identified as being laid off, temporarily out of work, or experiencing a reduction in income as a result of COVID-19.
- F. Many consumers surveyed indicated in the comment section of the survey that they are concerned over near future propane needs and ability to pay for minimum order quantities.
- G. Of the propane home heating customers surveyed, 38% of the respondents who are currently or nearly out of propane to heat their home and cannot afford to purchase propane due to COVID-19 income loss. Many of these respondents report living at high elevation.

1. Those consumers self reported their needs to get through the heating season to be:
  - a) Gallons: mean 224.5 (sd 161), min 20 max 1000
  - b) Dollars: mean 407 (sd 245), min 30 max 1500
- H. With Stay at Home orders in place, consumers surveyed are using more propane to heat their homes, cook meals and heat water throughout the day. They also have an increase in expenditures such as cleaning products and increased internet bandwidth for homeschooling.
- I. National Weather Service data shows that below-freezing temperatures are typical in Colorado at higher elevations through May.
- J. An analysis of census data on propane home heating is illustrated in the map below of the number of homes and percentage of homes with propane heating by county.



Colorado's less densely populated counties have a higher fraction of homes that heat with propane compared to the more densely populated counties<sup>1</sup>.

Coloradans who heat their homes with propane can be at higher risk of service disruption than those who heat their residences with utility-provided natural gas or electricity. Propane is delivered by truck to an on-residence tank instead of by pipelines or wires. Additionally, Coloradans who heat with propane must purchase a minimum quantity of fuel in order to receive a delivery—they are not able to purchase marginal quantities like gas or electricity. As public utilities, gas and electricity utilities have a duty to provide adequate service to their customers. But because propane marketers are private enterprises, they cannot be compelled to supply propane to the public. Due to these unique circumstances, residents of propane-heated homes are at greater risk of not being able to fuel their homes as a result of economic hardship and fuel supply or distribution problems.

The economic, social, and health impacts of the COVID-19 pandemic have significantly raised the risk that some Coloradans who heat with propane will be unable to heat their homes and water or have cooking fuel in the coming months. This is an especially impactful proposition for homes located in rural communities, high-altitude communities where temperatures stay low year round, and communities with higher vulnerability to disease. COVID-19 has already led to significant unemployment and other economic hardships that will result in some propane customers being unable to pay for home heating. COVID-19 has led to travel and public gathering restrictions that will result in higher home energy costs as Coloradoans seek shelter at home, and COVID-19 may cause delivery interruptions resulting from propane delivery staff who fall ill, the shuttering of businesses, and a variety of other cascading side effects of the pandemic.

#### **IV. Propane Assistance Programs in Colorado**

The Low Income Energy Assistance Program (LEAP) provides home heating assistance to low income residents across the state of Colorado. Typically the LEAP application period for home heating assistance runs from November 1 through April 30 annually. In response to unemployment resulting from the COVID-19 pandemic, the program has extended its application period through August 31 or when the regular block grant funding is exhausted, whichever occurs first. The maximum monthly income for the program is 60% of Federal Fiscal Year (FFY) 2019 State Median Income (SMI) which equates to a monthly income of \$2,371 for a one person household and \$4,561 for a household size of four. Recipients are responsible for payment of home heating and must have at least one US citizen/lawfully permanent resident in the household. The LEAP program is funded by a Federal Block Grant and Tier II Severance Tax Funds when available.

Energy Outreach Colorado (EOC) is a statewide nonprofit which has been in existence for over 30 years and provides utility bill payment assistance, energy efficiency upgrades for single and

---

<sup>1</sup> U.S. Census Bureau, 2013-2017 American Community Survey 5-year average data.

multi-family housing, health and safety audits, and furnace repairs and/or replacements. Funding is raised through public and private partnerships. EOC programs provide assistance to over 23,000 low-income households in Colorado. This work is accomplished by partnering with local vendors and contractors statewide. Households must be at or below 80% Area Median Income (AMI) to qualify for assistance.

## **V. Propane Marketers and Consumer Surveys**

Results and recommendations from the two surveys and analysis of the US Census data are presented here. The Propane Home Heating Marketers Survey and the Propane Home Heating Consumers Survey were both conducted in April 2020.

### **A. Propane Home Heating Marketers Survey (April 2020)**

The Propane Home Heating Marketers Survey sought to understand the impacts of the COVID-19 pandemic on the supply, delivery, marketing, and transportation infrastructure that serves Colorado's propane home heating demand. Specifically, the objectives of this survey were to:

Objective 1: Estimate the number and geographical distribution of customers who have had problems purchasing propane for residential use;

Objective 2: Estimate the size and scope of the potential need; and

Objective 3: Understand what potential solutions could be compatible with the requirements of the propane marketing industry.

With the assistance of the Colorado Propane Gas Association (CPGA) and LEAP, 123 individual email addresses were identified as representatives of propane marketers across Colorado. These marketers represented both those who are and who are not members of the CPGA. These propane marketers were emailed an online survey under CEO branding and using Colorado State University's institutional licenses for Qualtrics online survey software to allow for both desktop and mobile phone responses (see Figure 1).

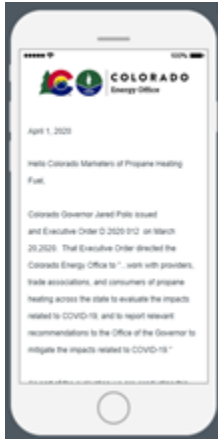


Figure 2. Style and branding of the Propane Home Heating Marketers Survey

This 11 question survey was sent on Wednesday, April 1, 2020, with a deadline for response of 8 am MT, Monday April 6, 2020. The survey generated 31 complete responses for a response rate of 25%, which is relatively high for an online survey.

Objective Served	Survey Question Number	Survey Question
Objective 1	1	What is the name of the propane marketer for which you work? (enter the name)
Objective 1	2	Which counties in Colorado does your business serve for propane home heating? (enter county name(s))
Objective 1	3	How many <b>residential customers</b> does your location serve with propane delivery or bottles? (enter number of customers)
Objective 1	4	What percentage by type of your <b>residential customers</b> are likely to need a delivery between now and the end of the heating season? (enter percent)
Objective 2	5	When do you anticipate home heating delivery ending for your business this heating season?
Objective 2	6	Have you observed a change in customers' demand for propane for home heating since the beginning of the COVID19 epidemic?

Objective 1	7	Estimate the number of residential customers who have expressed hardship in purchasing propane for home heating since the beginning of the COVID19 epidemic. (enter number of customers)
Objective 2	8	Estimate how much propane for home heating these customers expressing hardship would need on average for the remainder of the heating season, in terms of gallons per customer? (enter number of gallons per customer)
Objective 2	9	What is your minimum order size for delivering propane home heating fuel to your customers?
Objective 3	10	How strongly do you agree with this statement: I would consider providing a payment plan for customers that are current on their accounts but experiencing hardships from COVID19.
Objective 3	11	Do you have any recommendations for how assistance can be provided for customers that can't purchase propane for home heating due to COVID19?

## 1. Propane Marketer's Survey Results

To identify the number and geographical distribution of customers who have expressed hardship in purchasing propane, this survey sought input from propane marketers across the state of Colorado in the form of answers to Questions 1, 2, 3, 4, and 7. Responses were recorded from marketers that serve 53 of Colorado's 64 counties, about 60,000 delivery customers, and 2600 propane bottle customers (there are approximately 98,000 propane-heated households in Colorado). The surveyed marketers identified that many of their customers had not reduced their propane demand. While 28% of responding propane marketers stated that demand was unchanged, 63% of said that customers had increased the number of propane deliveries since the beginning of the COVID-19 pandemic. Only 9% of marketers surveyed responded that their customers had ordered slightly fewer propane deliveries, and none reported a significant decrease in propane delivery demand. The surveyed marketers also identified that some of their customers were already having trouble purchasing propane specific to the period of COVID-19 pandemic. The fraction of customers expressing concern about paying their bills varied from negligible numbers to more than 40% of the customer base of some propane marketers. Those marketers that describe the most number of customers expressing hardship are in the Western Slope (Garfield, Pitkin, and Eagle counties) and Southern Plains Communities (Otero, Huerfano, and Las Animas counties).

To estimate the size and scope of the potential need for heating propane, this survey sought input from propane marketers across the state of Colorado in the form of answers to Questions 5, 6, 8, and 9. In aggregate, the propane marketers estimated that the end of the heating season will arrive at the end of May and customers will need slightly more than 200 gals of propane until the end of the heating season (mean = 205 gals, stdev = 121 gals, n=23). This generally represents slightly more propane needed than the minimum order that a marketer will provide (true in n=23 responses).

To understand what potential solutions could be compatible with the requirements of the propane marketing industry, this survey sought input from propane marketers across the state of Colorado in the form of answers to Questions 10 and 11. Propane marketers surveyed were found to largely agree with the statement that they would consider providing a payment plan for customers who experience hardship due to COVID-19 pandemic, as illustrated in Figure 2.

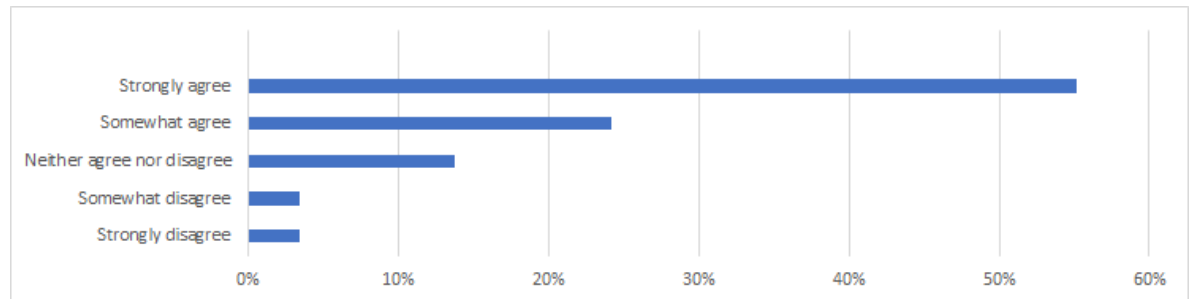


Figure 3. Results from Question 10, which asks, “How strongly do you agree with this statement: I would consider providing a payment plan for customers that are current on their accounts but experiencing hardships from COVID-19.”

The final survey question asks propane marketers for suggestions as to how to provide relief for customers who are experiencing hardship due to the COVID-19 pandemic. Of the propane marketers surveyed, 46% of responses identified additional support for LEAP (<https://www.colorado.gov/pacific/cdhs/leap>) as a near term means to support energy assistance for propane consumers. An additional 15% identified EOC (<https://www.energyoutreach.org/>) as a near term means to support energy assistance for propane consumers.

## 2. Discussion and Takeaways Propane Marketers Survey

The small sample size and quick turnaround time available for the Propane Home Heating Marketers Survey discourages broad generalization, but the results of this survey provide evidence to support a few key observations of the effect of the COVID-19 pandemic on propane marketers and their customers.

- a. Up to the date of the survey (April 6, 2020), propane marketers had not seen significant negative impacts to their businesses from

the COVID-19 pandemic. In comments that were input to the survey, marketers themselves attributed this to propane orders being a “lagging indicator” of economic problems. Because many propane delivery customers store a 1-2 month supply of propane at their residence, economic hardship (events such as job loss, illness, lockdown) will not express itself in reduced propane deliveries for 1-2 months after the event itself. Many propane marketers asserted that they will begin to see cancelled orders and delayed payments in May and June of 2020. It is also relevant to note their responses were averaged across all their clients; so while many may observe an increase or no change in propane demand, this could be because a fraction of their clients who can afford to increase their propane inventory are doing so, and the clients who cannot afford their propane needs are invisible to the propane marketers, so far.

- b. Surveyed propane marketers identified between 1000-2000 of their customers who have expressed economic hardship since the beginning of the COVID-19 pandemic. These customers are spread across the state but with a notable concentration of affected customers in the Western Slope and Southern Plains regions of Colorado. Because marketers can only economically deliver propane at quantities of 50-200 of gallons, this means that customers would have to make purchases that have costs of ~100s of dollars to be able to maintain propane for their residences until the end of the heating season.
- c. In terms of the form of any potential propane-specific energy assistance programs, many marketers surveyed pointed to the effectiveness and reputation of currently available programs that could be expanded to meet the new needs associated with the COVID-19 pandemic. Expanding the funding and reach of Colorado’s LEAP and EOC were identified as near-term means to mitigate any impacts of COVID-19 on Colorado’s residential propane customers.

## B. PROPANE HOME HEATING CONSUMERS SURVEY

The purpose of the Propane Home Heating Consumers Survey was to understand the impacts of the COVID-19 pandemic on the households in Colorado that rely on propane to heat their homes specifically by hearing directly from these residents. The survey was emailed to 6,283 households. The pool of households only included households who were LEAP (5972) and EOC (311) clients for at least one program year within the past four years (i.e., dating back to the 2016-2017 program year). This group was selected for survey because (1) contact information was readily available for this group of known

propane users and (2) this group is likely more vulnerable to the COVID-19 impacts due to their documented participation in energy assistance programs..

Similar to the Propane Home Heating Marketers Survey, an online link to the survey was emailed to these individuals, under CEO branding, and using Colorado State University's institutional license for Qualtrics online survey software. The email containing the survey link was sent on Tuesday April 7, 2020 with a deadline of Thursday April 9, 2020. The survey was designed to be both desktop and mobile phone compatible, see Figure 3 for the first page of the survey. The survey was offered only in English language because of the need for a quick survey construction.

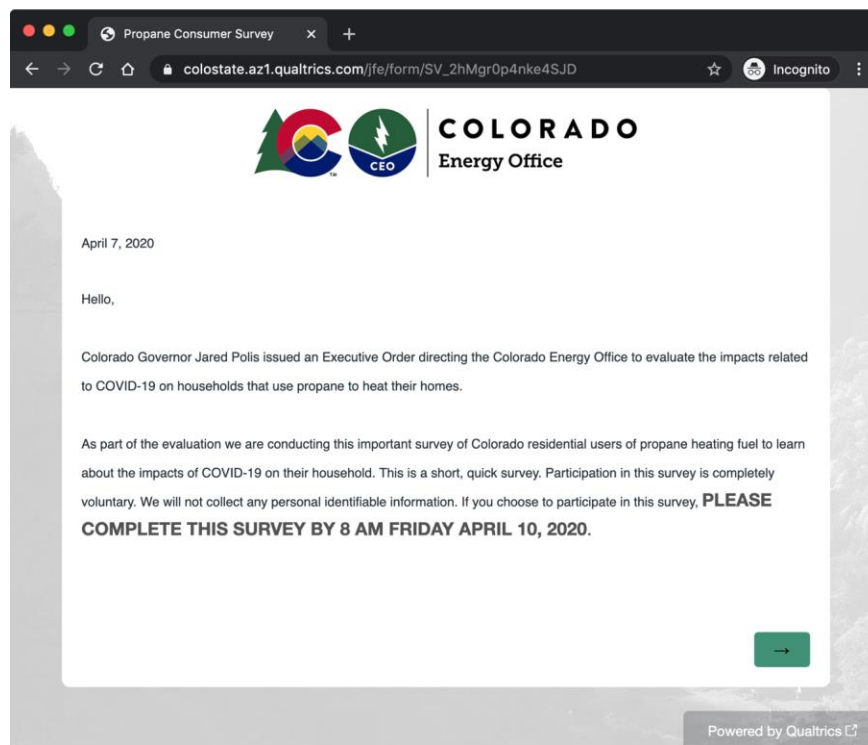


Figure 4. Style and branding of the Propane Home Heating Consumers Survey

The survey had nine questions (see table below) and generated 371 complete responses. Of those 371 responses, 359 households identified as current propane home heating users; hence the following analysis only considers the responses from the 359 propane-using households.

Survey Question Number	Survey Question
1	Do you currently use propane heating for your household?

2	Which county in Colorado do you live in?
3	Do you currently receive bill assistance to purchase propane for home heating?
4	What is your total household income?
5	How has your income status changed as a result of COVID19?
6	When do you anticipate this current home heating season to be over?
7	Which best describes your current residential propane heating needs?
8	Estimate how much more propane you would need to order to last through the end of this propane heating season? (in terms of gallons of propane or dollars)
9	Please describe how COVID19 has affected your residential propane heating needs.

#### 1. Propane Consumer's Survey Results

Of the 64 counties in Colorado, 52 of the counties were represented in this survey with at least one response from that county (see Figure 4). There were 79 participants that did not provide their county.

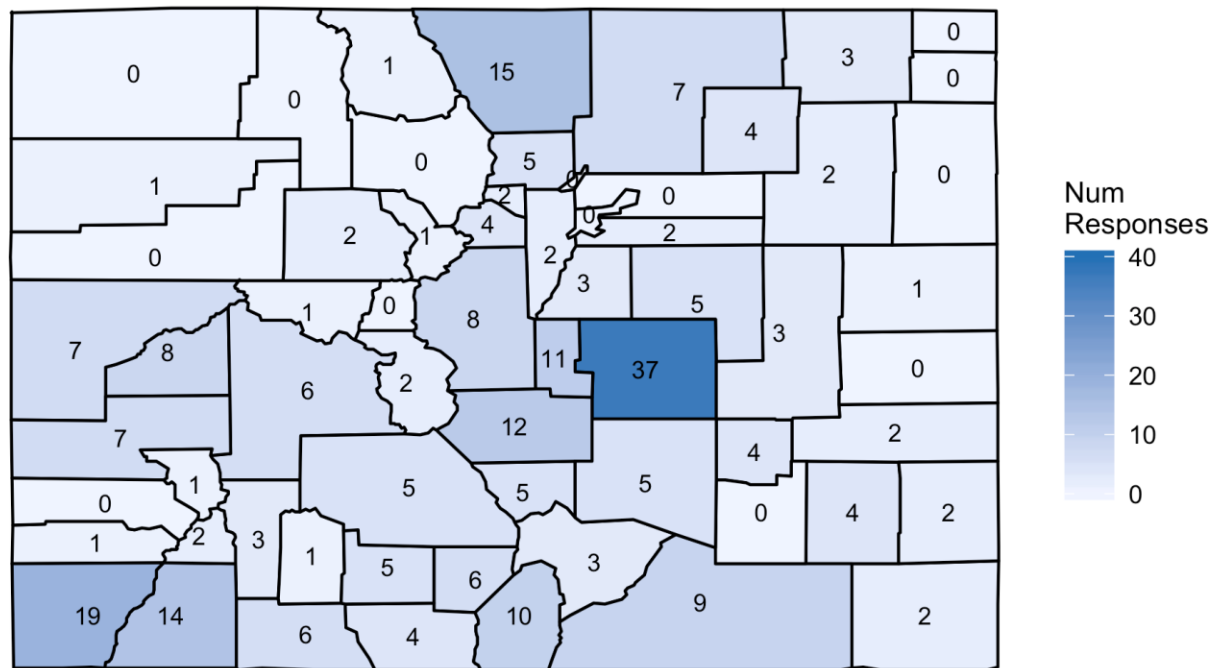


Figure 5. Number of survey responses per county in Colorado

As expected, the survey predominantly captured lower income individuals who are more vulnerable to the effects of COVID-19 impacts. Over half of the respondents indicated their total household income as less than \$25,000. The distribution of total household incomes represented in the survey is summarized in the table below.

Income	Num. of Households (% of Respondents)
Less than \$10,000	85 (23.7%)
\$10,000 to \$24,999	155 (43.2%)
\$25,000 to \$34,999	59 (16.4%)
\$35,000 to \$49,999	32 (8.9%)
\$50,000 to \$74,999	14 (3.9%)

\$75,000 to 99,999	4 (1.1%)
\$100,000 or more	1 (0.3%)
Prefer not to answer	9 (2.5%)

There were 206 (57.4%) respondents who identified as being laid off, temporarily out of work, or experiencing a reduction in income as a result of COVID-19. The details of the survey respondents are presented in the table below.

<b>Change in Income from COVID19</b>	<b>Num. of Households (% of Respondents)</b>
Lost job or temporarily laid off	86 (24%)
Reduction	120 (33.4%)
No change	149 (41.5%)
Increase	1 (0.3%)
NA	3 (0.8%)

The geographical distribution of the surveyed households that are experiencing a negative impact on their income (“lost job” or temporarily laid off” or “reduction”) is shown in Figure 5, where the gray regions represent counties without any survey responses.



End of June	48 (13.4%)
End of July	1 (0.3%)
End of August	2 (0.6%)
NA	10 (2.8%)

There were 138 (38.4%) respondents that indicated they would need propane before the end of the current heating season but could not afford to purchase their needed propane due to COVID-19 income loss.

<b>Propane Needs this Heating Season</b>	<b>Num. of Households (% of Respondents)</b>
Need propane, but cannot afford due to COVID19 income loss	138 (38.4%)
Do not need more propane before end of this heating season	72 (20.1%)
Need propane, but cannot afford for reasons other than COVID19	86 (24%)
Need propane and can afford to purchase it	53 (14.8%)
NA	10 (2.7%)

The geographic distribution by counties for these households that need propane but cannot afford it due to COVID-19 impacts is shown below in Figure 6.

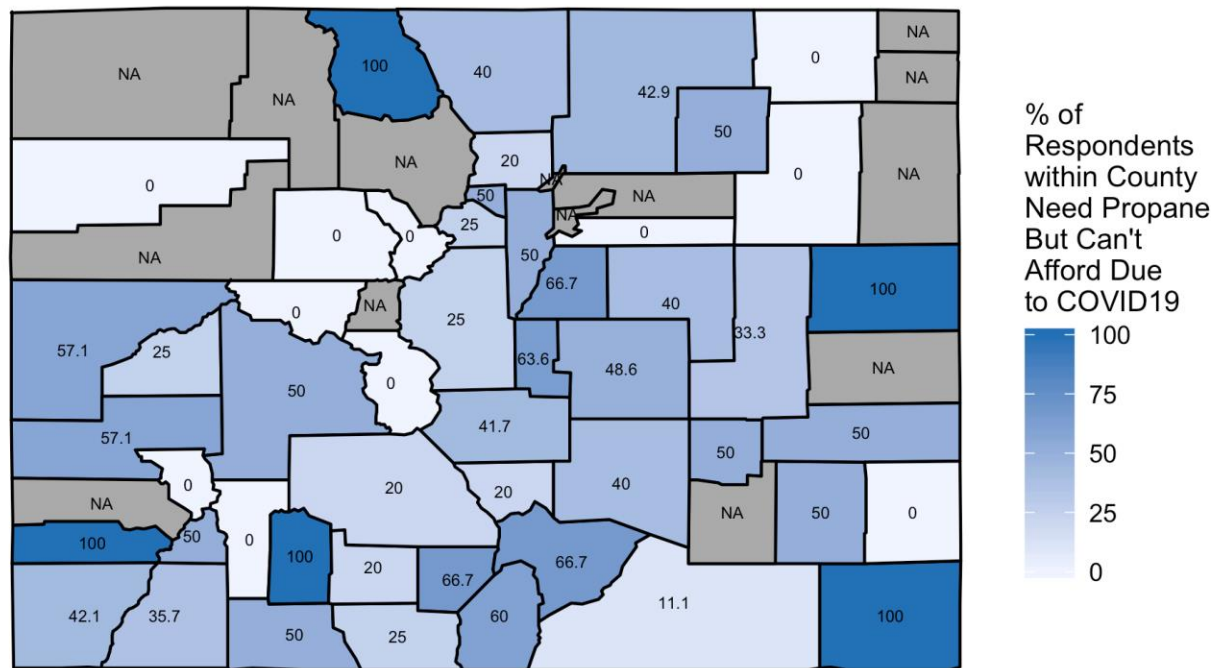


Figure 7. Percentage of respondents within each county that need propane but cannot afford it as a result of financial impacts of the COVID-19 pandemic

This data is further broken down by those currently receiving bill assistance and those not currently receiving bill assistance, which suggests both groups are in need of further assistance in order to meet their propane needs this heating season.

Propane Needs this Heating Season	Num. of Households	
	<i>Bill Assistance: Yes</i>	<i>Bill Assistance: No</i>
Need propane, but cannot afford due to COVID19 income loss	77	56
Do not need more propane before end of this heating season	57	15
Need propane, but cannot afford for reasons other than COVID19	60	23

Need propane and can afford to purchase it	34	19
--	----	----

The 138 respondents that reported needing propane but could not afford to purchase it due to COVID-19 income loss, provided a self-report of how much propane they would need to get through this heating season, both in terms of gallons of propane and dollars, which are as follows:

- a. Gallons: mean 224.5 (sd 161), min 20 max 1000
- b. Dollars: mean 407 (sd 245), min 30 max 1500

Lastly, respondents were asked to explain how COVID-19 has affected their residential propane home heating needs. For brevity, only a select few of the quotes have been provided below, for the full list of all responses see the Appendix. The overall theme of responses for this question was that people are home more and needing more propane than usual as a result, yet are unable to afford it due to income loss. Numerous respondents mention using more propane than usual because they need to keep their home warmer throughout the day since the family is home, they have been cooking more, and they have been needing more warm water for cleaning and washing hands. Many responses also expressed that they have been needing to spend more money on other essentials such as food, cleaning supplies, and increased internet bandwidth for homeschooling, and hence, do not have enough money for propane. There were also several responses indicating they had already received bill assistance this year and will not qualify for more before the heating season is over. Several also mentioned the burden of expensive minimum propane delivery sizes restricting their ability to get propane. Many also mention that, while they are okay on propane for now, they are concerned the financial burden they are incurring now will have a lasting impact through the next propane heating season. Note, these are direct quotes from respondents, without correction for spelling/grammar.

- “Loss of income makes it hard to pay high propane expenses. Living at 8,000 elevation, our temperatures are much cooler.”
- “I had just graduated school and had a job lined up, however, because of COVID my job became non essential and wasn't able to start because the shutdown happened right afterwards. Leaving me with no income.”
- “We are using more since we are home, cooking, heat, laundry etc. It's been colder than normal.so we are using more.”
- “I am out of propane - I am COVID affected - vulnerable - Immunity compromised”
- “We receive Leap which usually will provide,propane, for 75 % of the season i was to,starta,new,job in the,end of,march. That job and,the,ability to purchase the,remaining seasons propane needs has vanished. Right,now i am isolated caring,for my 86yo parent and cannot sfford help with him nor pay for the additional propane,needed.”

- "It has made it very hard to know which bills to pay. Heat is essential for us to live. On the other hand so is electricity and the mortgage. Which one do I pay?"
- "We are home more and need to keep the heat higher, we ran out a few weeks ago"
- "Having children home due to school shut down, heaters turned on more often during the day which is causing propane to be used at a faster rate than normal."
- "Spending on health, food, covid19 anti bacteria , And medical supplies"
- "I usually purchase in August and in January, so won't know the effects for awhile yet."
- "I would generally have saved what i need for propane after LEAP helps but i needed more food and basic essential since my children are home. And had to up my broadband internet in order to be fast enough for both my children to be online at the same time"
- "Home more, so using more propane. Reduction in income, but no reduction in monthly expenses."
- "I am on unemployment as a result of reduction in call volume for our business. Being home now (stay at home order) means more meals cooked here and having to heat during the day as well as at night (more propane used)."
- "the propane companys have raised the price so much ,even with me still working , very difficult to pay and they want payment on delivery."
- "We are home more so we have to have the heat on more hours a day. Therefore, we are going through our propane faster. Also we use propane to cook and since we are home, we are cooking more. So....more propane, and we also use propane for our hot water. More dishes, more propane."
- "Keeping everything cleaner, keeping house warm because we are inside more and washing clothes more. Keeping hands and body clean, to rid virus. Cooking more, because we stay at home."
- "When I got my income tax I paid a month ahead to give myself a head start with bills but then coronavirus happened and I lost income, cannot work so now that month I paid ahead is over and I'm scared because I have 2 kids and I'm a single mother; leap helped us with propane but that help ended in early February so now that I've lost work I'm scared about how I'm going to pay for propane because of the coronavirus"
- "Normally not in the home during day turning the heat down. Now because staying home using more for heat and cooking"
- "Lost income hurts everyone and definitely hurts you to get things you need the most . It puts you at more risk if you can only by little bits at a time. Stressful because sometime i run out and i have to wear a bunch of clothes and blankets and stay in my bed the whole time because the house is freezing. The whole thing is very hard to live a normal productive day. The last is the pain my body hurts so bad from medical problems and arthritis makes it painful to even get up to make a plate a food or brush your teeth on just any daily activities for that matter. You need more propane because your at home all the time so you use more propane"

- “Working from home but internet costs have now gone up due to have to increase internet use for homeschooling and working from home”
- “with both my self and daughter home all week now. we use more propane than we normally do. i put 200 gallons because my company will not deliver for less than that”
- “We are heating the house more because we are home more from work and kids are off of school. Using more propane with reduced income”
- “Reduce of hours/income makes it hard plus having 4 kids at home and trying to cover increase food cost, increase of electricity usage, increase of internet cost”
- “I am a self employed artist. All these surveys want me to say how this affecting me right now, but really this is going to be impacting my life for the next year. Am I going to have enough money to pay my pre-buy for propane for next heating season. I'm really afraid I won't. I am living day to day, week to week, month to month trying to prepare for being truly without the means to buy anything including food, electric, water, or propane.”
- “For this season I will be ok as I just filled up my tank. Next season could be tricky to have enough money to fill.”
- “Keeping the house warmer than normal 55degrees because of news that the virus does not do well in warmer environments.”

## 2. Discussion and Takeaways of Propane Consumers Survey

The sampling of only LEAP and EOC clients within the past four years for the Propane Home Heating Consumers Survey discourages broad generalization across the entire Colorado population, but the results of this survey yield important suggestions on how COVID-19 has affected propane home heating users.

- a. There are many propane consumers (38% of the respondents in this survey) who are currently or near out of propane to heat their home, yet cannot afford to purchase propane due to COVID-19 income loss. Many of these respondents report living at high-elevation and have long home heating seasons.
- b. With Stay at Home orders in place, consumers are using more propane to heat their homes throughout the day, cook all their meals at home, and heat water. They also have an increase in expenditures such as cleaning products and increased internet bandwidth for homeschooling.
- c. Many consumers are concerned over near future propane needs, as financial impacts COVID-19 will extend beyond this current heating season. Especially as propane delivery services require minimum order sizes that may be too large to front the bill under strained finances.

## C. Propane and Economic Impact Based On Census Data

Because propane usage and economic characteristics vary widely by county within Colorado, individual counties may be hit especially hard by COVID-19. The propane-heated households in the counties listed below may be especially hard hit. The counties identified as priorities are listed in Figure 7, below.

<b>County Name (alphabetical order)</b>	<b>Propane Customer Count</b>	<b>Rank by Customer Count</b>	<b>Propane Customer Percentage</b>	<b>Rank by Percentage of Households heated by propane</b>
Costilla	679	35	43.3%	3
Custer	1020	27	48.7%	2
El Paso	9971	1	4.0%	55
Elbert	3768	6	42.5%	4
Hinsdale	156	62	42.4%	5
Jefferson	4756	5	2.1%	60
La Plata	5285	4	24.2%	17
Larimer	5856	3	4.5%	53
Mineral	171	60	42.3%	6
Montezuma	2761	11	26.3%	15
Park	2110	15	28.6%	13
San Juan	126	63	49.4%	1
Weld	7418	2	7.4%	48

The counties which will see the most significant impacts and will require the greatest amount of assistance are likely those which have the highest number of propane-heated homes. Based on census data, the counties most at risk have a propane customer count of greater than 4,500 homes. In ranked order, these counties include El Paso, Weld, Larimer, La Plata, and Jefferson.

Additionally, those counties which have a high percentage of propane homes as a portion of total homes may, in absolute terms, feel less of an impact from COVID-19, but will feel an especially high impact at the county level and will also need assistance. Based on census data, the counties most at risk have a propane customer percentage of greater than 40 percent. In ranked order, these counties include San Juan, Custer, Costilla, Elbert, Hinsdale, and Mineral.

Finally, there are a number of counties that have both a relatively high propane customer count and percentage of propane customers. In ranked order, these counties include Elbert, La Plata, Montezuma, and Park.

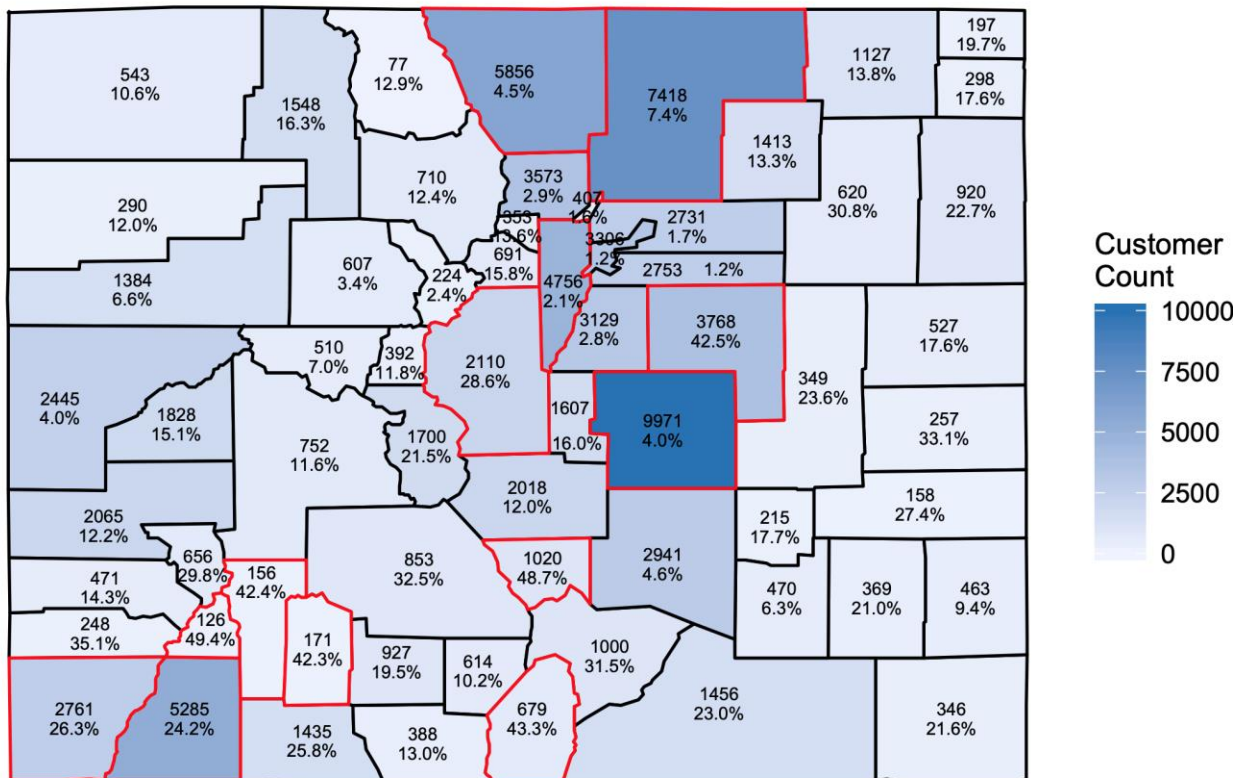
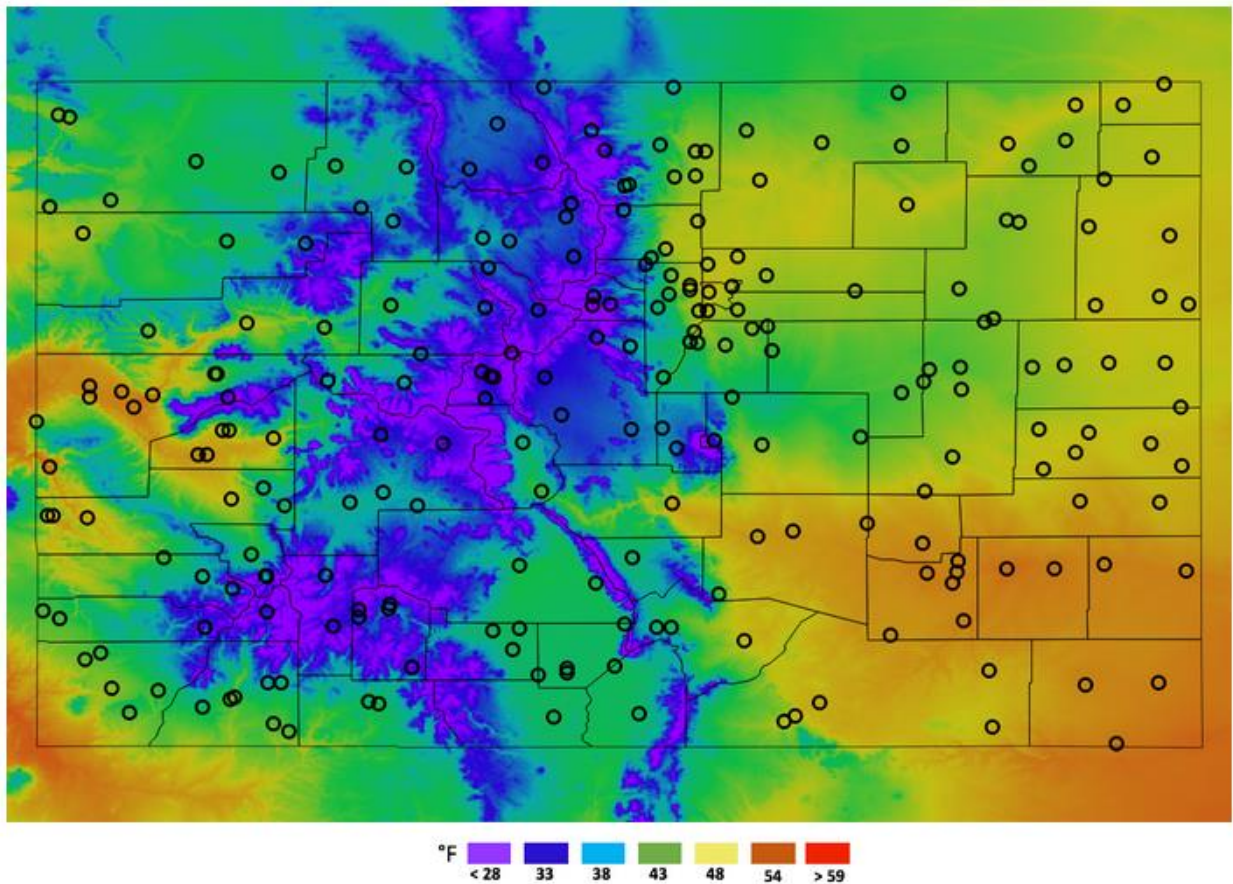


Figure 8. County level map with number of homes and percentage of homes with propane heating, with counties with highest impact rating from census highlighted in red

## VI. Weather and Temperature Forecasts for the Remainder of the Propane Home Heating Season

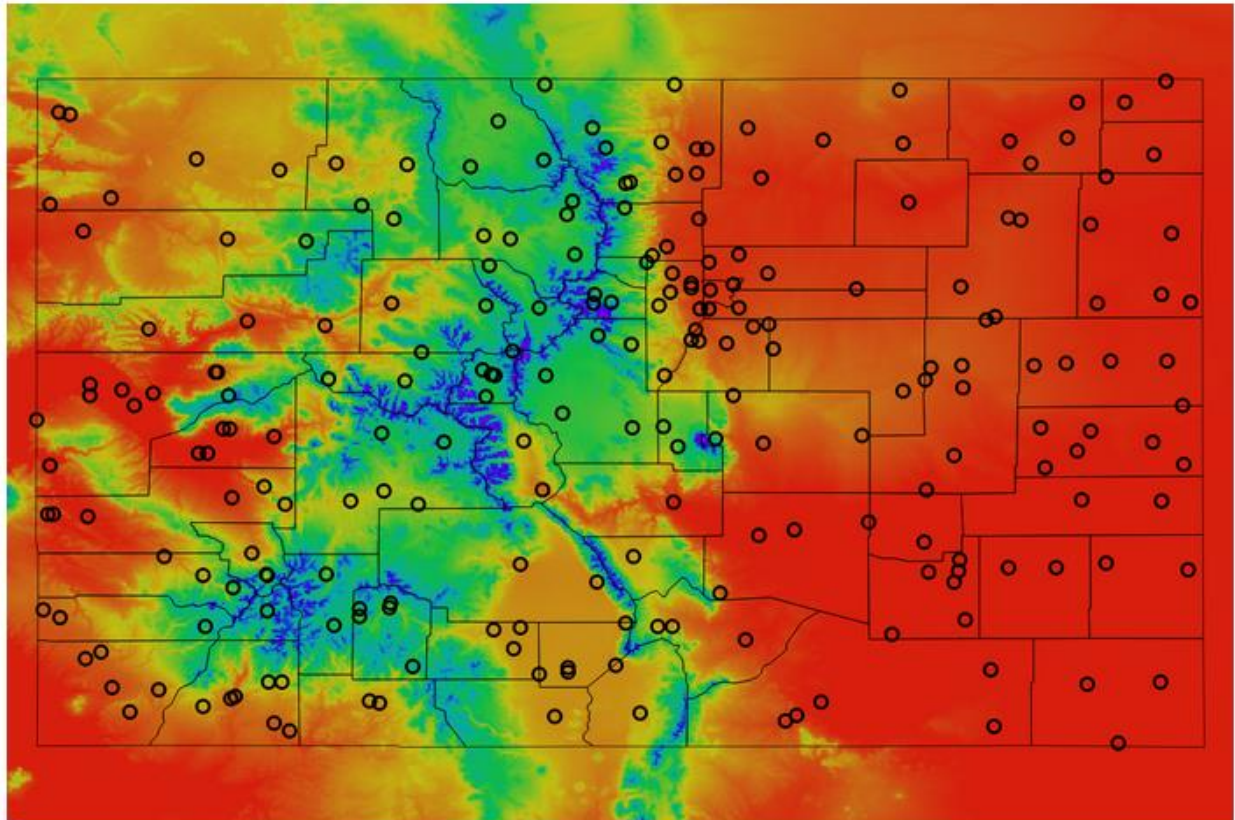
The National Weather Service Climate Prediction Center outlook calls for temperature to trend above normal for the period April through June. The best chances for above normal temperatures are in the southwest portion of the state.



April Average Temperatures 1981-2010

Source: Colorado Climate Center

[https://climate.colostate.edu/normals/t\\_apr\\_norm.html](https://climate.colostate.edu/normals/t_apr_norm.html)

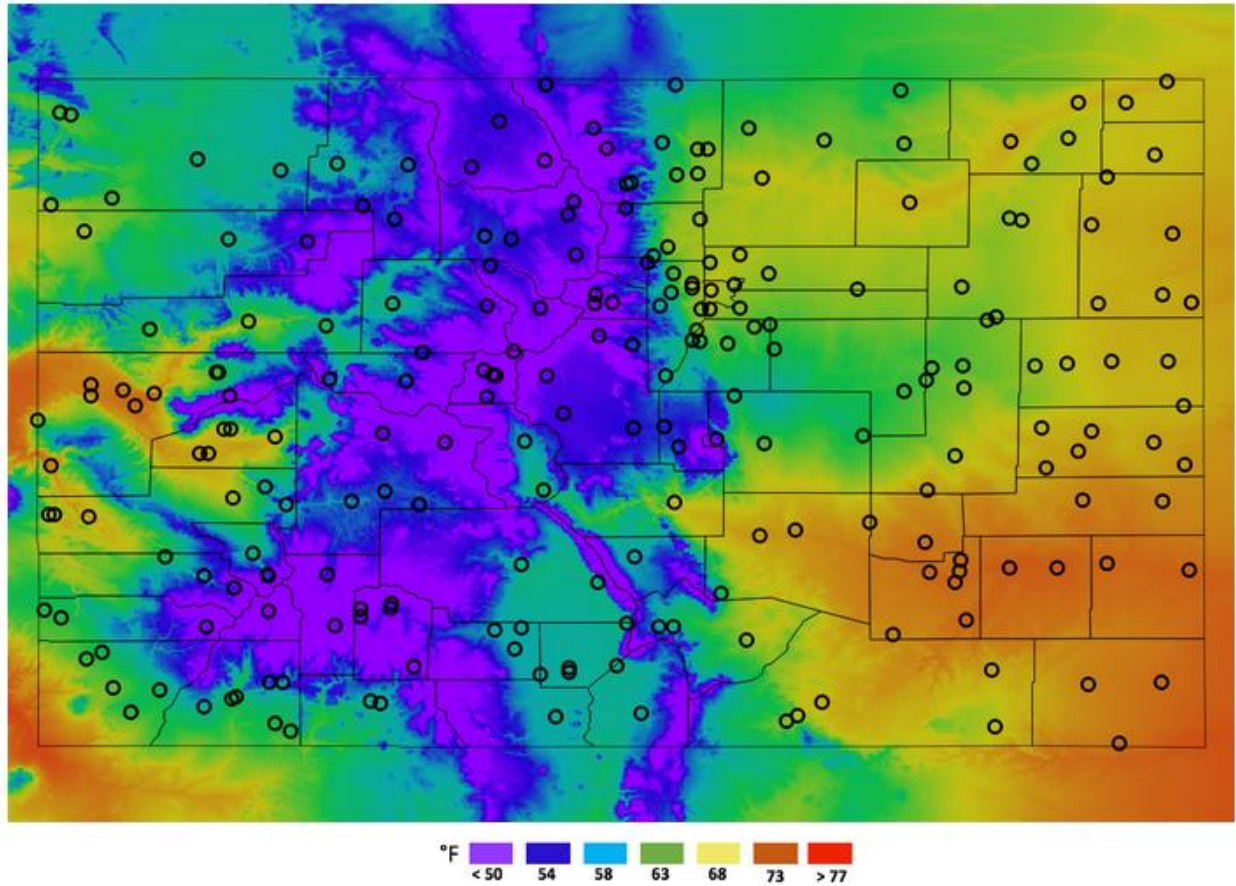


°F         
< 28   33   38   43   48   54   > 59

May Average Temperatures 1981-2010

Source: Colorado Climate Center

[https://climate.colostate.edu/normals/t\\_may\\_norm.html](https://climate.colostate.edu/normals/t_may_norm.html)



June Average Temperatures 1981-2010

Source: Colorado Climate Center

[https://climate.colostate.edu/normals/t\\_june\\_norm.html](https://climate.colostate.edu/normals/t_june_norm.html)

## VIII. Appendix

Below is the full list of responses from the Propane Home Heating Consumers Survey for the question: "Please describe how COVID-19 has affected your residential propane heating needs."

- "Loss of income makes it hard to pay high propane expenses. Living at 8,000 elevation, our temperatures are much cooler."
- "We are using more since we are home, cooking, heat, laundry etc. It's been colder than normal.so we are using more. "
- "I keep the heat low so i can afford to buy food. I am 65 and disabled and have been laid off of my job."
- "Having to use more Propane for hot water. Heat. Also to cook food since everyone is home now so using more"
- "Home more. Reduced income"
- "Na"
- "Lower income "

- "My family and friends cannot help. My disability through legal process has been delayed"
- "Staying in home more "
- "Propane companies are very difficult to get to come out. Loss of income is causing hardship to pay."
- "I have used more because of having to stay home"
- "Use more because we have to be home more "
- "We are close to being out and idk when we're going to be able to afford more right now"
- "Laid off have no money to get propane "
- "I had just graduated school and had a job lined up, however, because of COVID my job became non essential and wasn't able to start because the shutdown happened right afterwards. Leaving me with no income. "
- "Using more fuel to keep house warmer so not to get sick"
- "None. We have contract with local provider."
- "I'm at home more."
- "Running a lot less trying to stretch it all out."
- "Can't work to supplement S.S."
- "Inable to go out to work to provide the income to buy propane"
- "It hasn't. "
- "No effect"
- "Can't work "
- "I do not know that it has effected myself. I get leap every year. "
- "It hasn't. "
- "Home more means more propane"
- "Can't—Ét efforts it"
- "I am out of propane - I am COVID affected - vulnerable - Immunity compromised"
- "No income means tough choices"
- "Down to one income need propane for heating cooking and hot water"
- "Loss of jobs"
- "We receive Leap which usually will provide, propane, for 75 % of the season I was to, start a new job in the end of March. That job and the ability to purchase the remaining seasons propane needs has vanished. Right now I am isolated caring for my 86yo parent and cannot afford help with him nor pay for the additional propane needed."
- "Has made it hard to pay my bills "
- "NO IMPACT. FILLED TANK MONTH BEFORE COVID STARTED"
- "Can't work to supplement S.S."
- "Laid off and no income to even partially fill my tank"
- "I am not able to find work right now"
- "Still needing propane for heat and hot water but only working a few hours"
- "Well, home more. Usually turn down. live at high altitude, so if too cold inside sit in sun or my car. But it is warmer, so not freezing!"
- "Can't cook or shower as much due to propane cost"
- "Less hours at work less money to spread out for bills including heating "

- "My husband lost his job and my horseback riding business has stopped and we have 9 people in our house including adults and children"
- "It has made it very hard to know which bills to pay. Heat is essential for us to live. On the other hand so is electricity and the mortgage. Which one do I pay? "
- "Laid off of job."
- "It is cold everyday and I am 84 years old"
- "Having trouble paying propane bill going into past due "
- "I have a big balance i owe to amerigas. Getting laid off means i can't pay off my balance. "
- "Dont have money to pay for it"
- "Staying home more "
- "Had to get more grocery and more cleaning stuff just to survive."
- "No income = No nothing"
- "So far we are ok "
- "I'm afraid our local supplier's employees will get sick and not be able to deliver the propane."
- "It hasn't affected it at all"
- "My husband is self-employed and is unable to work due to state mandated closures of his chiropractor business"
- "Loss of income "
- "More time at home higher need with reduced income"
- "No job, no income, no propane"
- "I was laid off before Covid 19 but can not find work now because of it."
- "It really hasn't affected my Propane use. It just cost more than I have in my monthly retirement budget"
- "My husband lost his job"
- "Hasn't really effected us as of yet. But with the layoff and waiting for unemployment things could get worse. We just recently filled our propane with leap assistance. "
- "It hasn't yet."
- "I'm working from home, so my heat thermostat is at a regular level 64 - 68 degrees rather than energy saving 61 degrees when I am working at the office. I am wearing layers and running an electric space heater to keep warm while I work, but that's running up my electrical bill."
- "Well perhaps the governor can tell us if this is an essential service? Of course it is! If Governor Polis couldn't get natural gas he would certainly jump to it. Now a second reason is that we rarely ever see our delivery person. "
- "It has not affected my heating needs."
- "My husband is a self employed landscaper. The last couple of weeks, he's had a major decrease in jobs."
- "Staying at home now an need to heat all the time now"
- "We are spending more time at home, therefore need to raise the thermostat more often."
- "Since we are all here all the time we use more propane. "

- "extremely slow response to drive up to fill tank. w/o full 2+weeks in Dec.2019 and presently waiting for fuel 1-2 wk"
- "Loss of income, left me oweing a bill and now i cant even afford to get it, i also cook with propane!"
- "Due to loss of income, the cost of propane would be prohibitive to getting any."
- "The whole family is home and using more in daytime."
- "Family home in daytime and that uses more propane"
- "We are home more and need to keep the heat higher, we ran out a few weeks ago"
- "So far it has not"
- "I'm home more often, thus I have to turn the heat up and I'm cooking more."
- "My husband bacame disabled and I am now out of work"
- "Staying home and heating more during this time"
- "Job lay off started a new job yesterday. I did get leap this year"
- "We were just getting ready to get back to work this spring then the stay at home orders started. "
- "No income"
- "They filled my tank last week but I can't afford to pay the bill"
- "Staying at home throughout day, heating more meals"
- "We are home more so we use more propane for heat."
- "Lockdown so heat is always on also use for hot water and cooking"
- "Has not"
- "I'm home quarantine because I am high risk with heart and lungs issues do I'm using more heat because I'm here all the time and not turning it down when I leave"
- "Im quarantined from PT job and my own business is closed until Stay at Home Order is over"
- "No change because I live on social sccurity"
- "Loss of income to pay for propane"
- "Only delivery is once a week. "
- "Complete loss of income"
- "Live in remote area cant het out"
- "Laid off"
- "Na"
- "No change"
- "I have lost income "
- "Cuts down how much we can afford to put in our tank"
- "Having children home due to school shut down, heaters turned on more often during the day which is causing propane to be used at a faster rate than normal. "
- "n/a"
- "I lost building and residential contracts for cleaning."
- "Less income coming in plus being home 100% of the time calls for more propane usage "
- "Husband's hours have been reduced. "
- "Severe drop in number of clients"
- "Home more less money more propane"

- “really has not”
- “Loss of steady income”
- “We are home more and heat more since COVID19.”
- “leap is closed because of it”
- “Home always. “
- “I am 82 years old and on a fixed budget. “
- “The heating money I had to pay my propane bill was used to stock up on groceries and cleaning supplies. Money in the household is usually on a tight budget as it is. “
- “Minimal, since we are on keep fill system.”
- “home more and health impaired “
- “with everything happening and being only on Social Security I am very careful on trying to stretch my needs”
- “We are home more and haven’t been working as much due to covid-19 don’t want to bring it home to pregnant wife and 2 kids “
- “Spending on health, food, covid19 anti bacteria , And medical supplies”
- “The Thermostat is turned down”
- “Money’s tight.”
- “Not affected yet”
- “I’m retired w/ fixed income from Social Security. So I can pay for propane. Not easily, though. It’s pricier than natural gas.”
- “Theres only one workin parent at the moment.. im a healthcare provider so i dont have an option.. i love savin lifes bit its stressful rite now...it would really help to get ahead on propane.. “
- “My propane costs are covered by 3 sources: LEAP, our local family resource center The Pinon Project, and my daughter. My daughter’s income declined and then her help for me was cut.”
- “I am not able to work because I run a restaurant “
- “home all day leave on durying day”
- “No change”
- “I usually purchase in August and in January, so won’t know the effects for awhile yet.”
- “No change”
- “Loss of ability to go out to acquire items to sell for income. No income, no propane. Burning available firewood now. “
- “I would generally have saved what i need for propane after LEAP helps but i needed more food and basic essential since my children are home. And had to up my broadband internet in order to be fast enough for both my children to be online at the same time “
- “It’s cold at night “
- “ As of right now I cannot return to work till the beginning of June due to CORVID 19. I have lost income for those 2 months and do not have money to pay bills. “
- “Home more, so using more propane. Reduction in income, but no reduction in monthly expenses.”
- “It hasn’t changed my heating needs. I use a wood stove also.”
- “No job no money and we are running low”
- “I’ve been out of work for the past three weeks. “

- "Loss of income to buy anything more than necessities. Can always put more clothes or blankets on."
- "non as of yet"
- "Temporary laid off. Still gets cold at night. "
- "Has not affected my Propane needs"
- "I can't pay my current bill due to being laid off. "
- "Have cut down to reserve what I have in my tank, so that I can wait to purchase when prices are lower. "
- "Unchanged"
- "No income"
- "More people at home all day"
- "IŠ—Ève had to heat my house more due to us being home more. "
- "I'm a substitute teacher and have lost work and income but not considered laid off for unemployment benefits for this position."
- "I am on unemployment as a result of reduction in call volume for our business. Being home now (stay at home order) means more meals cooked here and having to heat during the day as well as at night (more propane used). "
- "Reduction in income "
- "Loss of work"
- "no available jobs"
- "heating the house all day while kids at home"
- "No change, I'm on social security."
- "Has not changed "
- "Very little, so far"
- "home more, heat on more"
- "No significant change"
- "Poorly"
- "Home more, more use. Lost 2 jobs"
- "the propane companys have raised the price so much ,even with me still working , very difficult to pay and they want payment on deleivery."
- "We are home more so we have to have the heat on more hours a day. Therefore, we are going through our propane faster. Also we use propane to cook and since we are home, we are cooking more. So....more propane, and we also use propane for our hot water. More dishes, more propane."
- "Caused supply do decrease and needs increased"
- "A lot "
- "No change."
- "Keeping everything cleaner, keeping house warm because we are inside more and washing clothes more. Keeping hands and body clean, to rid virus. Cooking more, because we stay at.home."
- "has been difficult before COVID-19"
- "Loss of some income and afraid to spend the money to purchase propane when items usually buy are not accessible resulting in buying items that are more expensive as they

are only items available. Unsure of future income losses so cut back on items including propane to save for other necessary items.”

- “not working and using more propane for cooking “
- “Everybody is home a lot more right now “
- “Higher food less medicine available”
- “fortunately we were able to fill it a month ago”
- “ Not at all”
- “Without income i can't afford to buy propane “
- “Hasn't affected it other than money is really tight. Lost some income from my wife's side so she is having to look for another job to make up money but that is impossible right now”
- “N/A”
- “My husband and I are both out of work as we are service industry workers, chef and bartender/server, we cant afford to buy propane, we are at home more due to the Stay home order, we live off grid in the mtns and therefore we rely on propane not just for heating but for cooking as well. We live at 9600 feet and have had to conserve propane more than ever. We have kids and are grateful winter is over, but the cold season will start up again mid to late August at this elevation temperatures drop to the 30s at night by mid August. Hoping things improve by then.”
- “i am home a lot more and cannot turn heat down while gone to conserve propane “
- “When I got my income tax I paid a month ahead to give myself a head start with bills but then coronavirus happened and I lost income, cannot work so now that month I paid ahead is over and I'm scared because I have 2 kids and I'm a single mother; I filled survey out a few minutes ago but forgot to mention leap helped us with propane but that help ended in early February so now that I've lost work I'm scared about how I'm going to pay for propane because of the coronavirus”
- “Lack of funds “
- “We've been keeping our heat on and up to help combat the virus. “
- “cost per gallon is more affordable”
- “haven't changed it yet”
- “We are home more and use more heat”
- “Normally not in the home during day turning the heat down. Now because staying home using more for heat and cooking”
- “Here fulltime “
- “no change”
- “The whole family is home 24/7 therefore we need to stay warm”
- “hasn't”
- “Colder home.”
- “We are quarantined. Using more propane being locked up.”
- “Can't afford bill from last fill”
- “Staying home and inside more”
- “Lost income hurts everyone and definitely hurts you to get things you need the most . It puts you at more risk if you can only by little bits at a time. Stressful because sometime i run out and i have to wear a punch of clothes and blankets and stay in my bed the whole

time because the house is freezing. The whole thing is very hard to live a normal productive day. The last is the pain my body hurts so bad from medical problems and arthritis makes it painful to even get up to make a plate of food or brush your teeth on just any daily activities for that matter. You need more propane because you're at home all the time so you use more propane"

- "it hasn't"
- "I am on a contract and was unable to pay bill in March and most likely April due to loss of income."
- "I am a massage therapist and IŠ—Èm not allowed to work until May 2020, possibly later. This is the time of year I have to fill my propane tank up and have no income. "
- "Loss of income, worried about next year"
- "We physically take our tanks to be filled. We live completely off grid. "
- "I am home during the day and cook all my meals at home"
- "We're home 24/7"
- "Husband has lost half his hours at work and can't afford all utilities"
- "So far it hasn't unless it gets real cold."
- "My income was cut in half due to lack of work for my employer. Lay offs and cut in hours"
- "Not sure"
- "In San Luis Valley, still cold , especially at night. Outside activities limited due to cold and wind."
- "Only make enough money for other bills "
- "Not needs, just ability to pay "
- "Not able to turn heat down as low because everyone is home, cooking more at home, more showers using more hot water."
- "it has not"
- "Had to pay for propane with getting less than 20 hours a week at work"
- "Working from home but internet costs have now gone up due to have to increase internet use for homeschooling and working from home "
- "No effect"
- "Staying home meant house was kept warm at all times."
- "not at all"
- "We are home more and using more propane "
- "Can't work to buy propane"
- "with both my self and daughter home all week now. we use more propane than we normally do. I put 200 gallons because my company will not deliver for less than that"
- "Kept house this Season at 60 degrees to try to w leap pay the bill.. Now owe them almost 400."
- "Part time jobs gone"
- "trying to figure out how to pay all bills including propane because of reduction in pay"
- "I donŠ—Èt know"
- "My kids are home all day now, so we must heat the house more than usual."
- "same"

- "My son has returned home due to lose of job and we are cooking more and using more hot water"
- "Service has stop "
- "We are home more"
- "I am at 17% propane and zero money to buy any more. So I have shut off the heat to conserve what we have to have hot water. We dress warm around the house."
- "Same"
- "I usually supplement my income ("950 monthly from ssdi) doing Auditing and merchandising jobs at major retailers. I'm so high risk so I haven't been supposed to leave my house since this all started. Even if I could leave there have been far fewer jobs available for me to complete than there usually are. Also, I have to take my tanks to get them filled and my local propane provider has been out for over a week. "
- "Home all the time so no reduction of indoor temperature during the day. That causes the furnace to run more using more propane"
- "self employment is non existent."
- "Not much, I live in a trailer park where I can get it with out driving."
- "None. WeŠ—Ère still getting by"
- "My husband has had his needs to disable was cut from State. We're barely living now. It's wrong now we're struggling harder. I might as well be on the road no joke. I'm a medical patient. Had two cancer and one tumor still by my eyes. I don't think it right all across Colorado you are hurting \_™...¢\_™...¢ people. While you are eating xvier. Now I'm running scared cause I can't keep my house cleaning. I'm in n outta the hospital alot so you'd like to see me dead cause I can't provide my home cause you felt to take his money from him. Totally dead wrong. Thanks. 9702344495 please call me I'd love to chat with you."
- "No longer on a scheduled route. Always have to call to get propane delivered"
- "We are heating the house more because we are home more from work and kids are off of school. Using more propane with reduced income"
- "My child has to stay home full time therefore the heat needs to be on fulltime. My hours are currently parttime 4 days a week so i am home more as well. "
- "I just topped our tank off using the last of LEAP. We used tax return money to pay the rest. We wouldnŠ—Èt have been able to pay the amount due after LEAP if we hadnŠ—Èt received a return."
- "Using more nowadays "
- "I work at a school, however I was told that we would still get paid without even being there. I also do you not know if the paychecks will be reduced or not. "
- "took longer to get propane"
- "I have to rent a truck to fetch it. Max 80 lbs in passenger vehicle. DOT regs. Friends not driving."
- "It hasn't really."
- "Being at home more"
- "Lack of residential cleaning jobs"
- "It has not"
- "Less income makes it harder for pay for."

- "Have to stay home and keep heat on."
- "Im home more because i am high risk with lung issues"
- "I am retired in SS of least than "800 monthly,80 years old living alone at South Park 10.000 feet altitude"
- "NA"
- "Dog boarding business has failed due to zero customers because of COVID-19 travel restrictions. Therefore, no income means I can't buy propane, among many other things."
- "I stay home all the time, and i hate the cold ao i run my heater all day. I have a furnace but need to have some Onw come start it"
- "I received LEAP assistance already this year. That is why I can afford propane now"
- "We have no work and home more so we need more heat"
- "it has not"
- "N/A"
- "I am home more, so using more heat."
- "no effect what so ever . just a big media hyp"
- "Reduce of hours/income makes it hard plus having 4 kids at home and trying to cover increase food cost, increase of electricity usage, increase of internet cost"
- "not at all"
- "I have to use more propane because of more home time and use."
- "I'm home all day"
- "I have to spend more money trying to find food and other necessary things that I can not find at the stores that I need"
- "ItŠ—Ès on a schedule and if you donŠ—Èt need it yet you have to wait till they are in your area again but might get a fee to go out of roughy. That would be my thought "
- "loss of mpney"
- "Need to use more bc of stay at home order"
- "I am disabled and live with my sister who is not. When she normally goes into work, I turn the heat way down to conserve. She is now working from home and gets cold much easier than I do. I do crafting things to destress during times like this, she is an OCD baker and that is our cooking source as well as our heat so more has been going to that to help her destress."
- "I've been affected by not being able to get out and pick up side work and by the store limiting hours"
- "Because my husband was laid off from his job, our household income is less and it makes it harder to pay the bills"
- "I am a self employed artist. All these surveys want me to say how this affecting me right now, but really this is going to be impacting my life for the next year. Am I going to have enough money to pay my pre-buy for propane for next heating season. I'm really afraid I won't. I am living day to day, week to week, month to month trying to prepare for being truly without the means to buy anything including food, electric, water,or propane."
- "Not affected "
- "For this season I will be ok as I just filled up my tank. Next season could be tricky to have enough money to fill."

- “Need to pay my propane bill, but have no money to pay for it because of loss of job”
- “I had to hurry and fill my tank early so we wouldn't run out during the stay at home order”
- “Keeping the house warmer than normal 55degrees because of news that the virus does not do well in warmer environments.”
- “It has not effected me yet. I am still working with reduced hours. Who knows what will happen in the next few weeks though.”
- “At home during day, needing to keep heat up for longer periods of time”
- “1st time renting since November 2019 - Landlord renting for 1st time, no separate metering - had hoped to buy a home early summer - unable to relocate presentalt”
- “No effect”
- “Not able to afford it “
- “long wait times for delivery. at least that should be the last fill of the season. ran short and had to use space heaters a fire for warmth. we lived. this is sissy stuff compared to what my great grandparents went through during great depression. “
- “I donŠ—Èt have money to buy more propane because IŠ—Èm working just few days at week I have to buy groceries “
- “COVID19 has not effected my propane”
- “My husband works for Uber which has become saturated since other people have been laid off. While he is working the same hours, he is not getting the same amount of work.”
- “My EBT cash that I used to pay for propane and rent has ended.”

For more information contact:

**Maria DiBiase Eisemann**

**Policy Analyst, Transportation Fuels and Technology**

Colorado Energy Office

P [303.866.2204](tel:303.866.2204) | C [720.607.1993](tel:720.607.1993) | F [303.866.2930](tel:303.866.2930)

[1600 Broadway, Suite 1960, Denver, CO 80202](https://www.colorado.gov/energy)

[maria.eisemann@state.co.us](mailto:maria.eisemann@state.co.us) | [www.colorado.gov/energy](https://www.colorado.gov/energy)