OliverWyman

COLORADO
Department of Regulatory Agencies

HOMEOWNER AVAILABILITY STUDY

Colorado Department of Regulatory Agencies (DORA) – Division of Insurance

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March 2023

A business of Marsh McLennan

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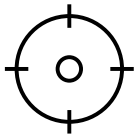
EXECUTIVE SUMMARY

BACKGROUND

Assessing the stability, availability and affordability of Insurance

- In the context of recent wildfires in the State of Colorado, Senate Bill 22-206 was passed, seeking ways of addressing the **stability**, **availability**, and **affordability** of homeowner insurance in the Centennial State.
- The Division of Insurance (DOI) is responsible for the fulfillment of this mandate and engaged Oliver Wyman to conduct a study on its behalf, evaluating the situation of insurance availability & affordability for homeowners in Colorado.
- In order to evaluate the situation, Oliver Wyman performed two types of assessments:
  - A **quantitative assessment** which analyzes granular data collected from insurance carriers, and
  - A **qualitative assessment** which summarizes feedback provided by carriers and industry associations regarding insurance availability/affordability in Colorado and possible approaches to address these issues.

Execution of the Study



For each component of the availability & affordability assessment, our work involved the following steps:

A. Quantitative Assessment

- Create a data collection framework that will enable a granular analysis of availability & affordability of homeowners insurance products in Colorado.
- Manage the data collection process with insurance carriers.
- Assess recent trends in Colorado homeowner insurance, with a specific focus on whether affordability and availability of coverage is currently under pressure in some regions.
- Assess whether these trends are tied to the wildfire exposure in the state, which has caused significant losses in the recent years.

B. Qualitative Assessment

- Survey insurance carriers on their current underwriting & pricing methodologies, with a particular focus on their treatment of wildfire risk.
- Research existing property insurance availability programs in other states and provide recommendations for Colorado regarding development of a similar program.

KEY FINDINGS: SUMMARY

Observations

Profitability of the "Homeowners Multi-Peril" Market

- From a profitability standpoint for the insurance industry, the Colorado market has been struggling in recent years, reporting the 4th largest 5-year direct loss & DCC[1] ratio of all US jurisdictions.
- Significant wildfire activity (e.g., East Troublesome & Marshall fires) have exacerbated these high loss ratios. Some of Colorado's areas at high risk of wildfire run close to the densely populated areas of the state, increasing the potential for large losses to insurers.

Trends in Premium Increases

- Premiums have been increasing significantly in Colorado over the last three years. Between January 2019 and October 2022, the average homeowner premium is up +51.7%, or +11.5% annually.
- Measured on an annual basis, the pace of premium increases is also accelerating from +6.75% in 2020, to an average premium increase in 2022 (as measured through October) of +14.84%.
- Rate changes (including more sophisticated handling of the wildfire peril), as well as inflation, appear to be the most likely drivers of those increases. Rate increases observed in Colorado are measurably higher than the countrywide average.

Trends in Written Exposures

- On a unit basis (i.e., number of homeowner risks insured), we observe that the market has expanded modestly in all years under study (2020 through 2022). This likely reflects new housing development.
- However, we further observe that outside of the top 5, carriers have been shrinking their exposures in the Colorado market since 2021. Specifically, 76% of carrier groups shrank their exposures in 2022 (through October), with 32% of carriers shrinking by more than 10%. In other words, The market is currently consolidating under the largest 5 carrier groups.
- Furthermore, we see that the pace of growth of the industry is trending downwards significantly over time, nearly leveling off to 0% growth as of October 2022 (time of the survey). If these trends continued in late 2022 and into 2023, this would suggest some homeowners will face insurance availability issues in 2023.

Correlation between industry trends and wildfire exposure

- Premium increases are significant across many regions of the state regardless of the wildfire exposure, although the increases are moderately higher in high-risk areas.
- At the industry level, we do not see more shrinkage of exposures in high-risk areas, although some carriers are selectively non-renewing the policies that they perceive to have the highest risk level.

Affordability & Availability Implications

Affordability

- The magnitude of premium increases that are accumulating year after year are impacting affordability.
- The accelerating nature of the premium increases may also suggest that the affordability issue may be continuing to deteriorate beyond the period measured in this study (which was through October 2022).
- With pressure from wildfire losses, inflation, a hardening reinsurance market, and historically unprofitable results in Colorado, insurers are likely to continue to seek premium increases.

Availability

- While the exposure data provided by carriers does not indicate a significant decrease in homes insured overall, there is a clear shift in the market. The fact that most carriers have been shrinking their exposures in the state in 2022 – some very materially – suggests some turmoil for policyholders and instability in the market.
- An additional source of concern is the downward trend in the industry growth in exposures. The industry growth fell to 0% by the end of our analysis period (2022-Q3). If these trends continue, it may lead to year-over-year shrinkage, which would lead to exacerbated availability concerns.
- Some carriers report non-renewal actions and new business restrictions based on wildfire risk, which corroborate the shifts observed in the data and aligns with the market turmoil.

Conclusion and Recommendations

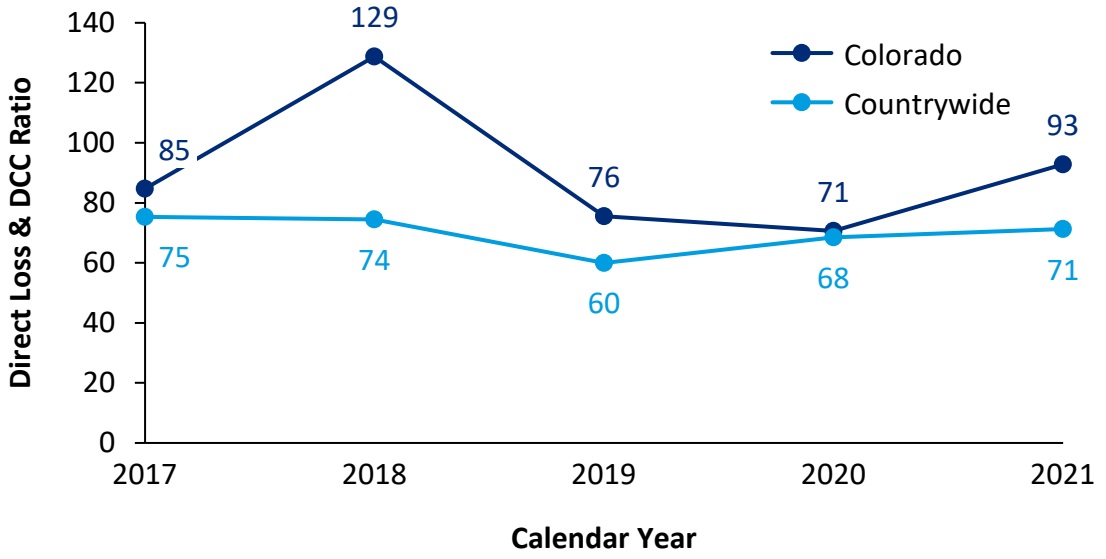
- If recent trends continue or exacerbate, it is reasonable to expect that the homes that insurers perceive to have the highest level of risk will face insurance availability issues.
- A Residual Market Plan would provide a market of last resort that would allow high-risk homes to secure coverage during this time of market transition and turmoil.
- Such a Plan should consider the appropriate underwriting criteria, product offering, and price point, in order to avoid undue disruption to the voluntary insurance market.
- Attention to wildfire mitigation measures should also be explored as a means to control fire damage, reduce insurance losses, and improve stability of the insurance market.

[1]: DCC stands for Defense & Cost-Containment Expenses. It refers to the costs of adjusting a specific claim.

KEY FINDINGS: STATE OF THE COLORADO MARKET

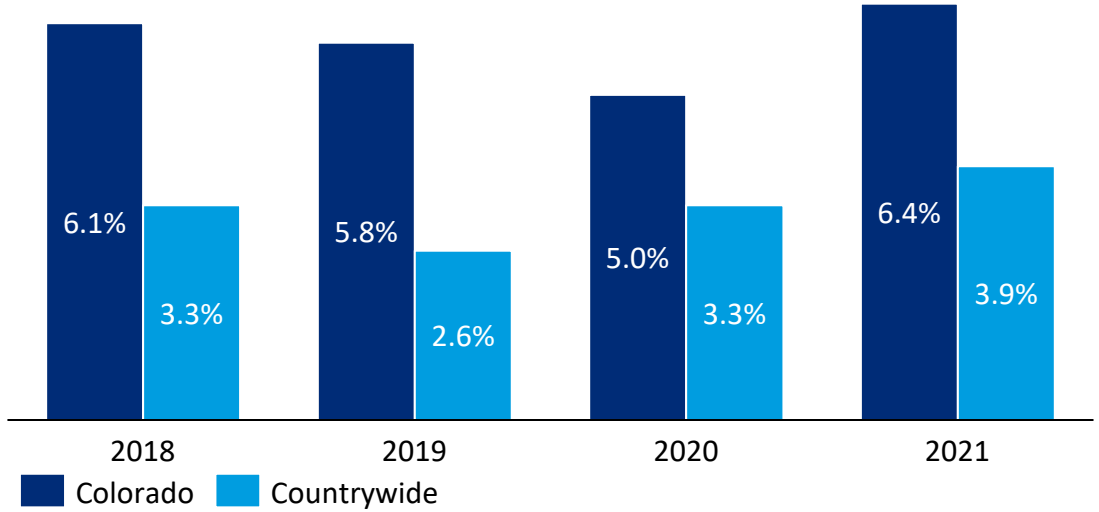
5-Year Loss Ratio Assessment

The Colorado "Homeowners Multi-Peril" market has been struggling over the recent years from a profitability standpoint.
Colorado's Loss & DCC[1] ratios have consistently been above countrywide averages, leading each time to an underwriting loss for the industry:



Source: S&P Market Intelligence, Oliver Wyman Analysis.

Approved rate changes by year – Homeowners MP – Selected Carriers[1]



[1]: Derived from the rate filings of top national carriers (~Top 10) in each state.

The magnitude of the difference between rate adjustments undertaken in the state vs the rest of the country highlights the industry's perspective on the profitability of homeowner policies in the state.

Source: S&P Market Intelligence, Oliver Wyman Analysis.

[1]: DCC stands for Defense & Cost-Containment Expenses. It refers to the costs of adjusting a specific claim, and represents roughly 1%-2% of Earned Premiums for the "Homeowners Multi-Peril".

KEY FINDINGS: TRENDS IN AVERAGE PREMIUMS

Measured annually, average premiums have increased significantly between 2019 and 2022, and at an accelerating pace.

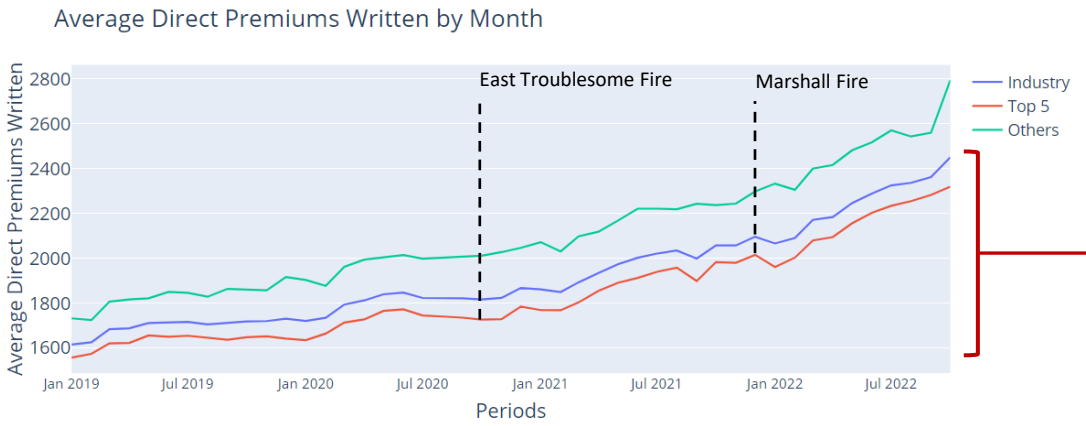
Industry movements in premiums & exposures – October 2022 year-to-date

Year	Written Premiums Growth (%)	Written Units Growth (%)	Avg. Premium Growth (%)
2020	13.52%	6.35%	6.75%
2021	10.73%	1.63%	8.96%
2022	16.00%	1.01%	14.84%

Average premiums have been **increasing significantly** over the last 3 years, and at an increasing rate.

In terms of **total exposures written**, the **industry is still growing** on a year-to-date basis, **although the trend is headed downwards with time**. In fact, on a quarterly basis growth is now reaching 0% as-of 2022-Q3 (see next slide).

Measured on a monthly basis, the magnitude of increases is even clearer, standing at +51.7% between January 2019 and October 2022.

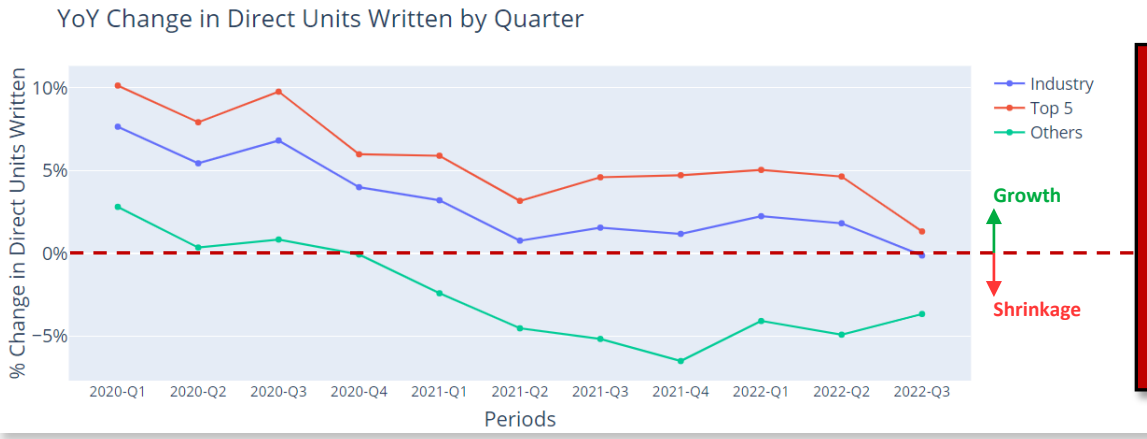


- The industry average premium is up +51.7% over the analysis period (46 months), or +11.5% annually.
- Inflection points are observed concurrent with the major wildfires.
- Inflation and efforts to improve rate adequacy are likely other key contributors to the increases over time.
- The increase since the beginning of 2022 is +18.6%, or +22.7% annually.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Oliver Wyman Analysis.

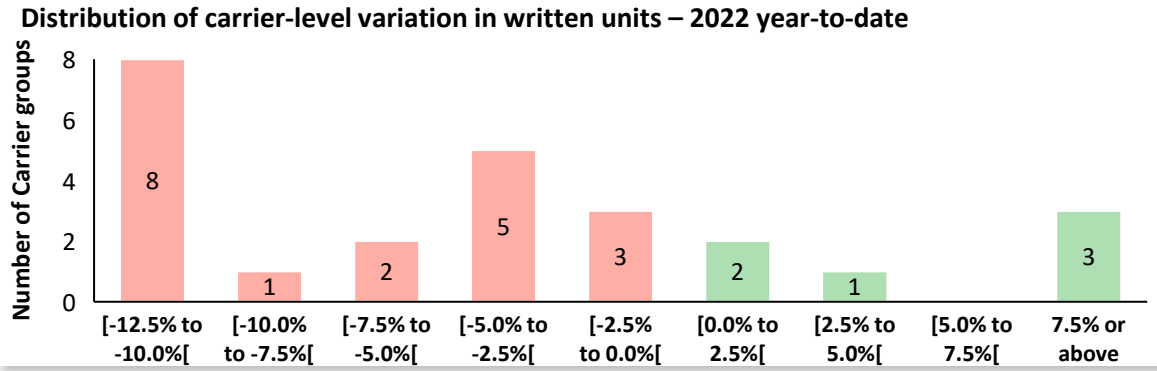
KEY FINDINGS: TRENDS IN WRITTEN EXPOSURES

The growth in written units observed at the industry level is driven by the largest carrier groups; others have been shrinking in the last 2 years.



- The industry as a whole has been growing (at a generally declining pace) since 2020. However, outside of the top 5 carrier groups, exposures have been materially shrinking since 2020-Q4.
- Growth in the overall industry & Top 5 carrier groups has leveled off, just reaching 0% growth for the first time in 2022-Q3. Larger concerns may lie ahead if the largest carriers are also starting to reassess their appetite.
- A market consolidation appears to be taking place in Colorado, with the largest carriers taking a bigger piece of the pie.

A majority of carrier groups have been shrinking their exposures in the state in 2022 (YTD-October)



Through October 2022 year-to-date, **76% of carrier groups have written fewer policies** than during the same period last year.

Furthermore, a material **32% of carrier groups are even down more than 10%** over the period.

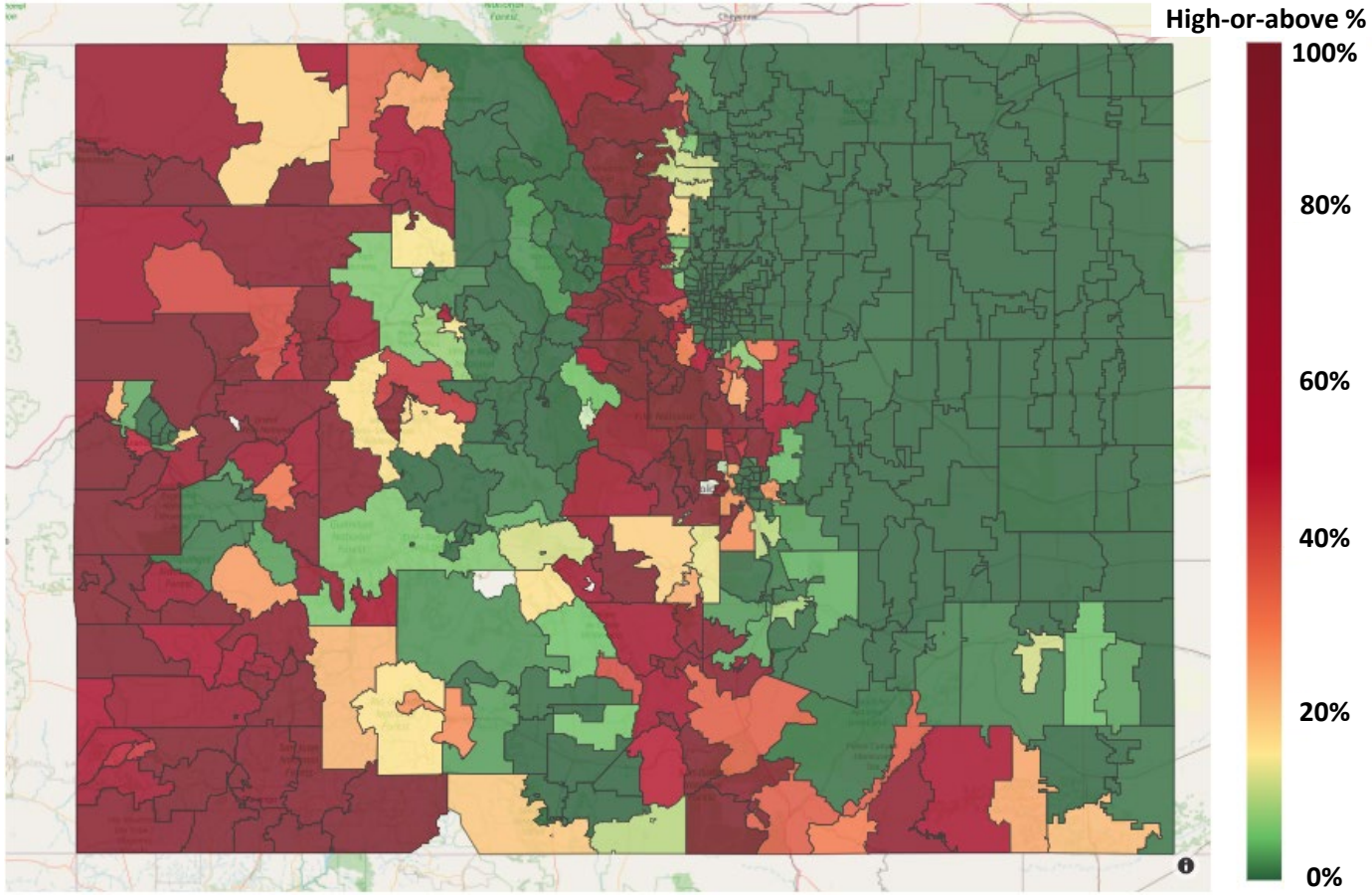
At the industry level this is offset by some larger carriers picking up a portion of the risks left out by others.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Oliver Wyman Analysis

KEY FINDINGS: COLORADO WILDFIRE EXPOSURE

Representation of wildfire risk in Colorado at the ZIP code level

Measured as the % of building structures found in areas of "high", "very high" or "extreme" risk



Source: Guy Carpenter's wildfire risk score, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

Wildfire Exposure in Colorado

Wildfires are believed to have played a material role in Colorado's loss experience in recent years, and such it is anticipated that at least some of the measures implemented by carriers (such as non-renewals and tightening underwriting criteria) are targeted at controlling this risk.

There is indeed significant wildfire exposure in the state. The map on the left combines Guy Carpenter's wildfire risk score and satellite imagery to estimate the level of wildfire exposure found in each ZIP code of the state.

This wildfire exposure is largely concentrated in two bands of land that run across the state from North to South, with the easternmost band running close to the densely populated areas of Denver, Colorado Springs & Fort Collins.

High-or-Above Areas of Wildfire Risk

The wildfire map segments the US territory into zones representing exponentially more risk of wildfire. The risks starts becoming more material once we reach the "High" zone and above.

The exposure at the ZIP code level is estimated by counting the building structures that fall under high-or-above areas using satellite imagery. Overall this represents 16.64% of building structures in Colorado.

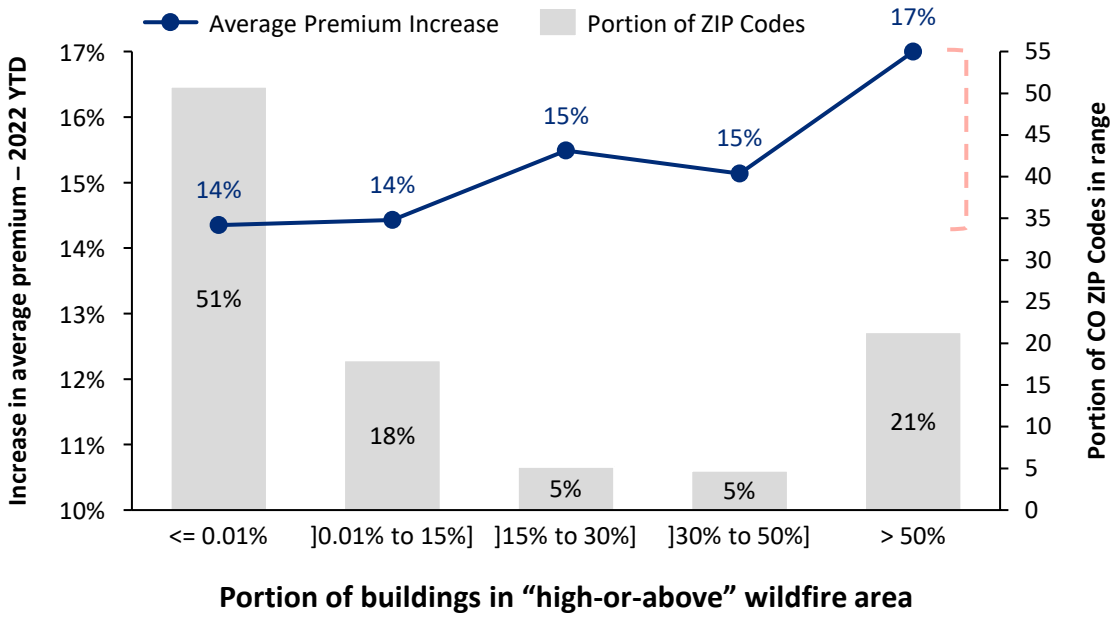
Color Scale Disclaimer

Any ZIP code not depicted with the darkest shade of green presents **some** exposure to areas with high-or-above risk of wildfire.

Note: Blank shadings indicate areas where a score was not available. Different ZIP code extraction dates between GC and OW are causing a handful of discrepancies.

KEY FINDINGS: CORRELATION WITH WILDFIRE RISK

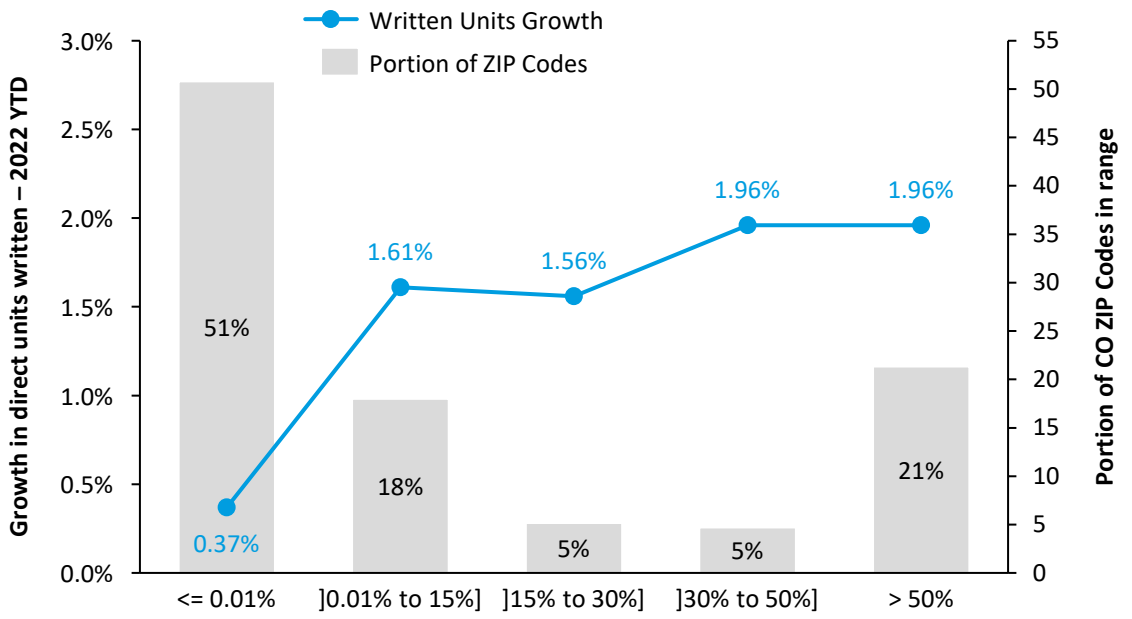
Average premium increase vs wildfire risk in the ZIP code – 2022 YTD



Although this graph highlights a positive correlation between the size of premium increases and the exposure to wildfire risk, it is important to note that the **amplitude between the smallest and the largest increases remains relatively small (+14% to +17%)**.

This suggests that the rating actions currently taking place in Colorado are probably much broader in scope than the wildfire peril alone, although there seems to be some segmentation with respect to the wildfire peril.

Growth in written units vs wildfire risk in the ZIP code – 2022 YTD



It does not seem like high-risk areas have been subject to greater shrinkage in exposures in 2022.

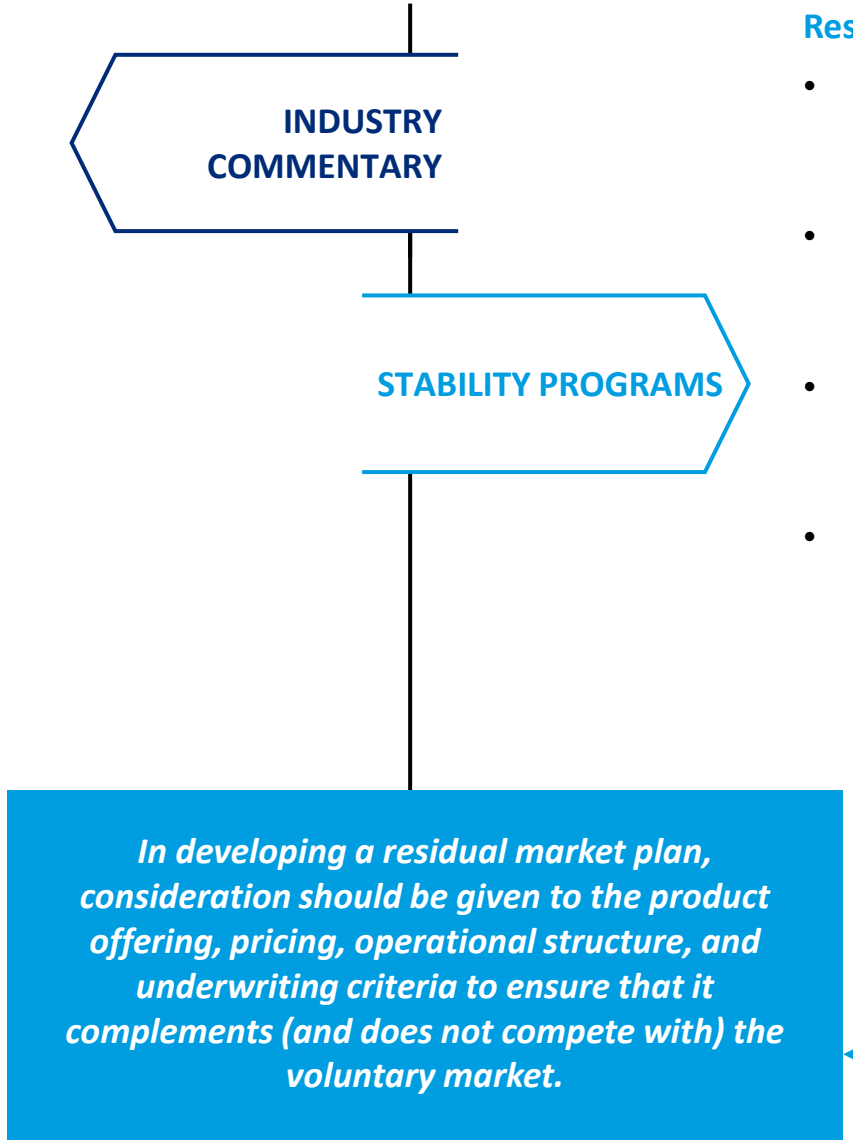
While some policyholders may be facing significant restrictions in these areas at the carrier level, this is not the case at the industry level.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Guy Carpenter's wildfire risk score, Oliver Wyman Analysis

ADDITIONAL FINDINGS: INDUSTRY COMMENTARY AND RESIDUAL MARKET PLANS

Based on survey responses from major carriers, the insurance industry response to recent Colorado wildfire activity is mixed:

- Some carriers report no efforts to withdraw from high-risk territories.
- Other carriers are reporting non-renewal initiatives that target a small percentage of Colorado homes with the most extreme levels of wildfire risk, particularly in instances where loss mitigation measures have not been taken.
- Wildfire risk is being considered in evaluating applications for new business, with carriers increasingly relying on external wildfire scoring models to evaluate eligibility.
- Other issues (not directly related to wildfires) are also putting upward pressure on homeowners' insurance premium levels. These factors include widespread inflation and a hardening reinsurance market.



Residual Market Plans:

- Many jurisdictions within the U.S. have property residual market plans that provide a market for difficult-to-insure policies.
- Colorado (along with several neighboring states with increasing wildfire risk) does not currently have a residual market plan for property risk.
- Given recent concerns about insurance availability for high-risk homes, Colorado is exploring developing a residual market plan.
- Stakeholders have provided guidance regarding items that Colorado should consider if a residual market plan is developed. This guidance is targeted at:
  1. Ensuring the Plan can provide an insurance market for high-risk properties;
  2. Limiting disruption in the voluntary market;
  3. Making sure there is not an undue financial burden on the insurance industry or taxpayers.

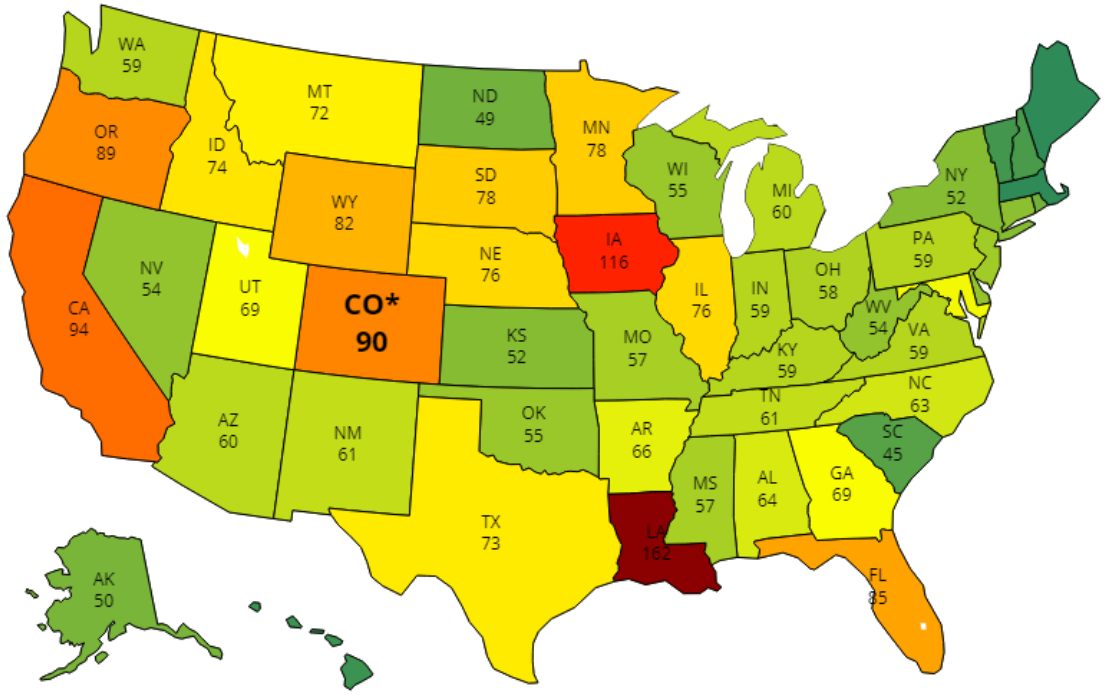
02

STATE OF THE MARKET

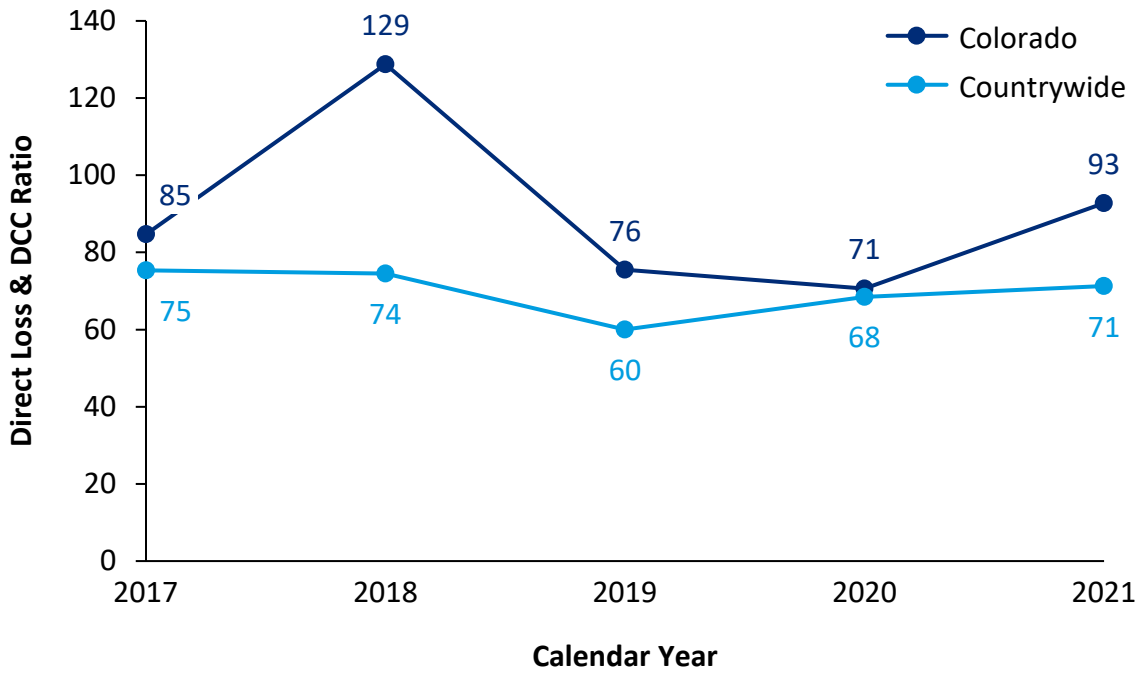
LOSS RATIO ANALYSIS: COLORADO HOMEOWNERS MULTI-PERIL

The Colorado homeowners' insurance market has been consistently reporting underwriting losses over the last 5 years.

5-year Direct Loss & DCC Ratio by state – Homeowners Multi-Peril (%)



Direct Loss & DCC Ratio by year – Homeowners Multi-Peril (%)



Colorado has reported the 4th highest Loss & DCC ratio in the US over the last 5 years (out of 51 jurisdictions – including DC), exceeded only by Louisiana, Iowa & California.

Colorado loss ratios have consistently been above countrywide averages, leading each time to an underwriting loss for the industry.

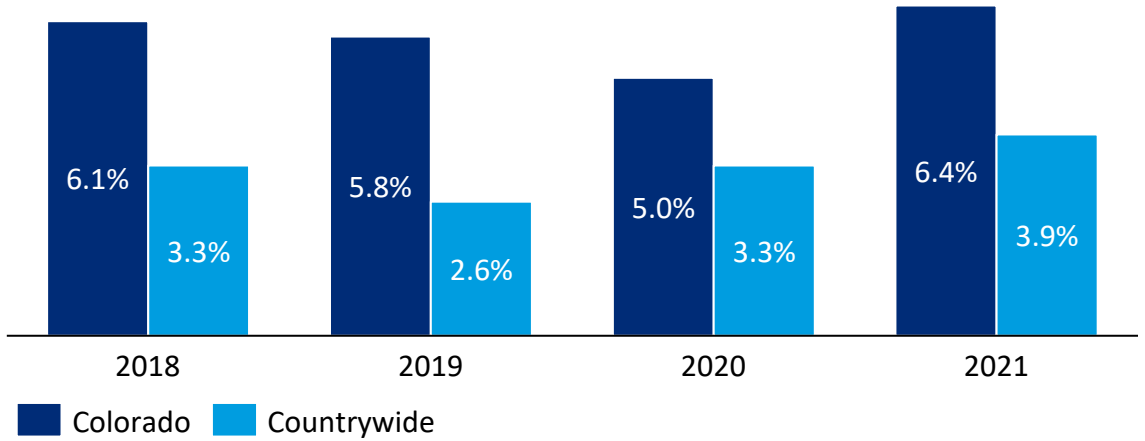
[1]: DCC stands for Defense & Cost-Containment Expenses. It refers to the costs of adjusting a specific claim, and represents roughly 1%-2% of Earned Premiums for the "Homeowners Multi-Peril".

Source: S&P Market Intelligence, NAIC report on profitability (2023), Oliver Wyman Analysis

RATE CHANGE ANALYSIS: COLORADO HOMEOWNERS MULTI-PERIL

These profitability struggles have generated rate increases that materially outpaced the countrywide averages.

Approved rate changes by year – Homeowners – Selected Carriers[1]



[1]: Derived from the rate filings of top national carriers (~Top 10) in each state.

The magnitude of the difference between rate adjustments undertaken in the state vs. the rest of the country highlights the industry's perspective on the profitability of homeowner policies in CO.

Disclaimer: This graph displays **rate increases**, which refers to direct changes to the rate levels and parameters in the insurers' rating plans. In addition to this, certain changes in policy features can lead to a **premium increase** beyond that which is driven by a rate increase**.** Examples of changes to policy features include: addition of new endorsements, revisions to reconstruction cost estimates (generally due to inflation), and adverse claim activity which could trigger surcharges at renewal.

Implications for this Study

1. **Environment of persisting high Loss & DCC ratios:**

   In light of these findings regarding the performance of the Colorado market, it is not surprising to see carriers making upward rate adjustments.

2. **Impact of wildfires on these results:**

   It is widely known that the state of Colorado has experienced significant wildfire activity over the recent years, which contributed – at least partially – to the high loss ratios.

   As such, we anticipate that at least some of the profitability measures implemented by carriers in the state may have been targeted towards the wildfire risk.

3. **Availability/Affordability considerations:**

   Extended periods of unprofitability coupled with catastrophic exposures may force some carriers to implement drastic pricing and/or underwriting measures in order to restore adequate profit margins, which – at least in the short term – may lead to availability and/or affordability concerns for the population seeking coverage.

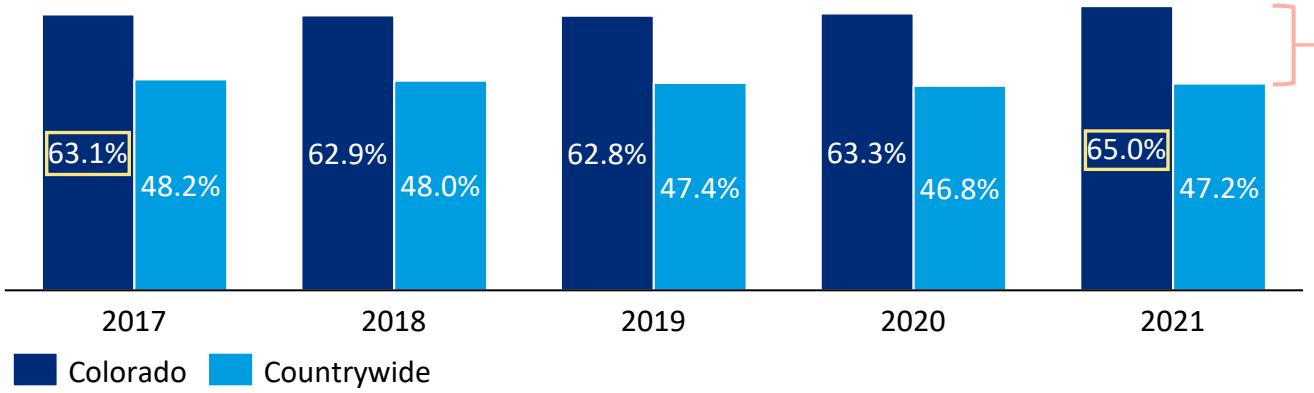
   The time is right to get a pulse of the market and assess whether major shifts are currently taking place.

Source: S&P Market Intelligence, Oliver Wyman Analysis

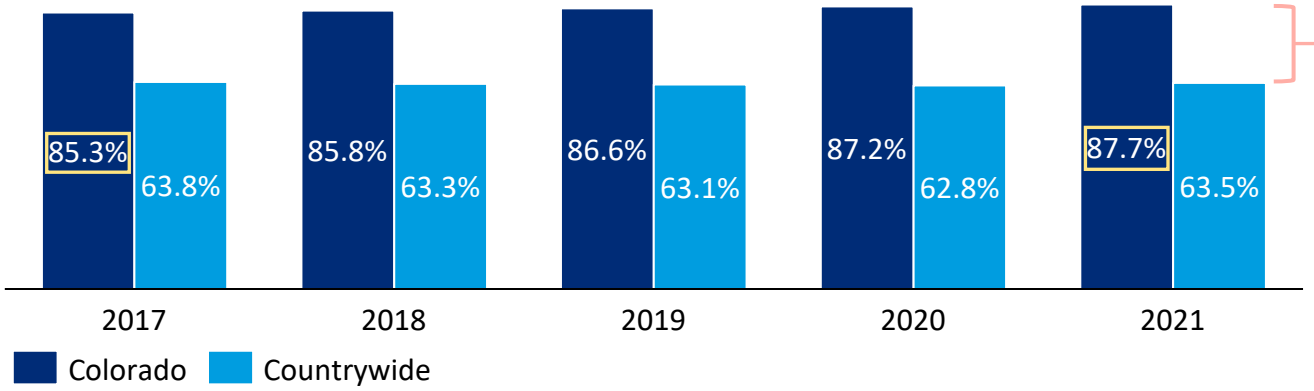
MARKET DYNAMICS OF FOR COLORADO HOMEOWNERS INSURANCE

The Colorado market is much more consolidated under the largest carrier groups than the rest of the country.

Market Shares (Direct Premiums Written) held by the Top 5 carriers – Homeowners Multi-Peril



Market Shares (Direct Premiums Written) held by the Top 10 carriers – Homeowners Multi-Peril



Source: S&P Market Intelligence, Oliver Wyman Analysis

Overall level of concentration

The Colorado market is much more concentrated than the countrywide average. In 2021, the Top 5 carriers held 17.8 more percentage points of market shares (24.2 more percentage points for the Top 10).

Also, in 2021 the list of top 10 carrier is the same at the state and the countrywide levels (although the order differs). This means that the vast majority of premiums in Colorado are sold by large national carriers.

Possible implications of this higher concentration of national carriers in Colorado may include:

- Colorado-specific catastrophes do not represent as significant a solvency threat to national carriers as they would to small regional carriers;
- However, if large national carriers find Colorado to be too risky or unprofitable a market, they can shrink in (or withdraw from) the state without losing a significant share of their countrywide premiums. This is a potential threat to the stability of the Colorado market.
- Additionally, when the market is concentrated among a few groups of carriers, major pricing or underwriting reassessments from any of them could quickly put the market in turmoil.

Trend in the level of concentration

It is also worth noting that the level of concentration of market shares held by the Top 5/10 carriers has been increasing over the recent years in Colorado, which was not the case at the countrywide level.

03

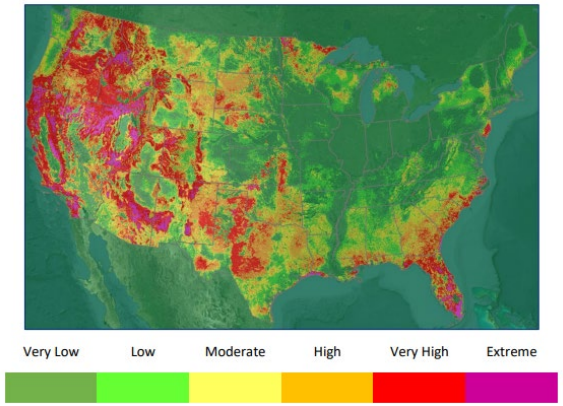
WILDFIRE EXPOSURE IN COLORADO

GUY CARPENTER'S WILDFIRE RISK SCORE

This tool will allow us to reconcile the availability findings with each region's wildfire exposure

The Tool

- Enhanced & repurposed version of the US Forest Service's (USFS) Wildfire Hazard Potential for insurance usage.
- Classifies the US territory into 6 categories of wildfire hazard grades, from Very Low to Extreme.
- Developed for P&C insurers to enable an evaluation of wildfire risk at the location level.
- Scores are updated periodically to reflect updates to data sources & refinements in methodology.



Specifications

Baseline: USFS[1]

- USFS's Wildfire Hazard Potential represents a combined view of wildfire **likelihood & intensity**.
- It uses multiple spatial datasets:
  - Data produced for the Large Fire Simulator
  - Fuel & vegetation data (LANDFIRE)
  - Past fire occurrences (1992-2015).
- Primary purpose is to identify areas that require vegetation treatment, not explicit wildfire risk.

Adjustments

- **Fire Intensity**: Based on conditional flame length, adjusts for the potential for structure damage.
- **Fire Suppression**: Adjusts for enhanced suppression response in highly populated areas.
- **Spatial Smoothing**: Reduce cell-to-cell volatility and capture ember transport.
- **Ignition Frequency**: Adjust score in areas without recent ignitions.

Local Enhancements

- Apply a factor based on granular 30m resolution data, considering fuel, slope, and aspect.

Applications for this project

Risk Assessment

- This model can identify Colorado's high-risk areas at a very high level of granularity.
- This wildfire exposure can be translated at the Zip Code level using satellite imagery, by counting the building footprints falling under each hazard grade.

Interpretation of recent trends in industry data

- We will then be able to compare our findings in terms of premium increases & coverage restrictions to each area's wildfire exposure.

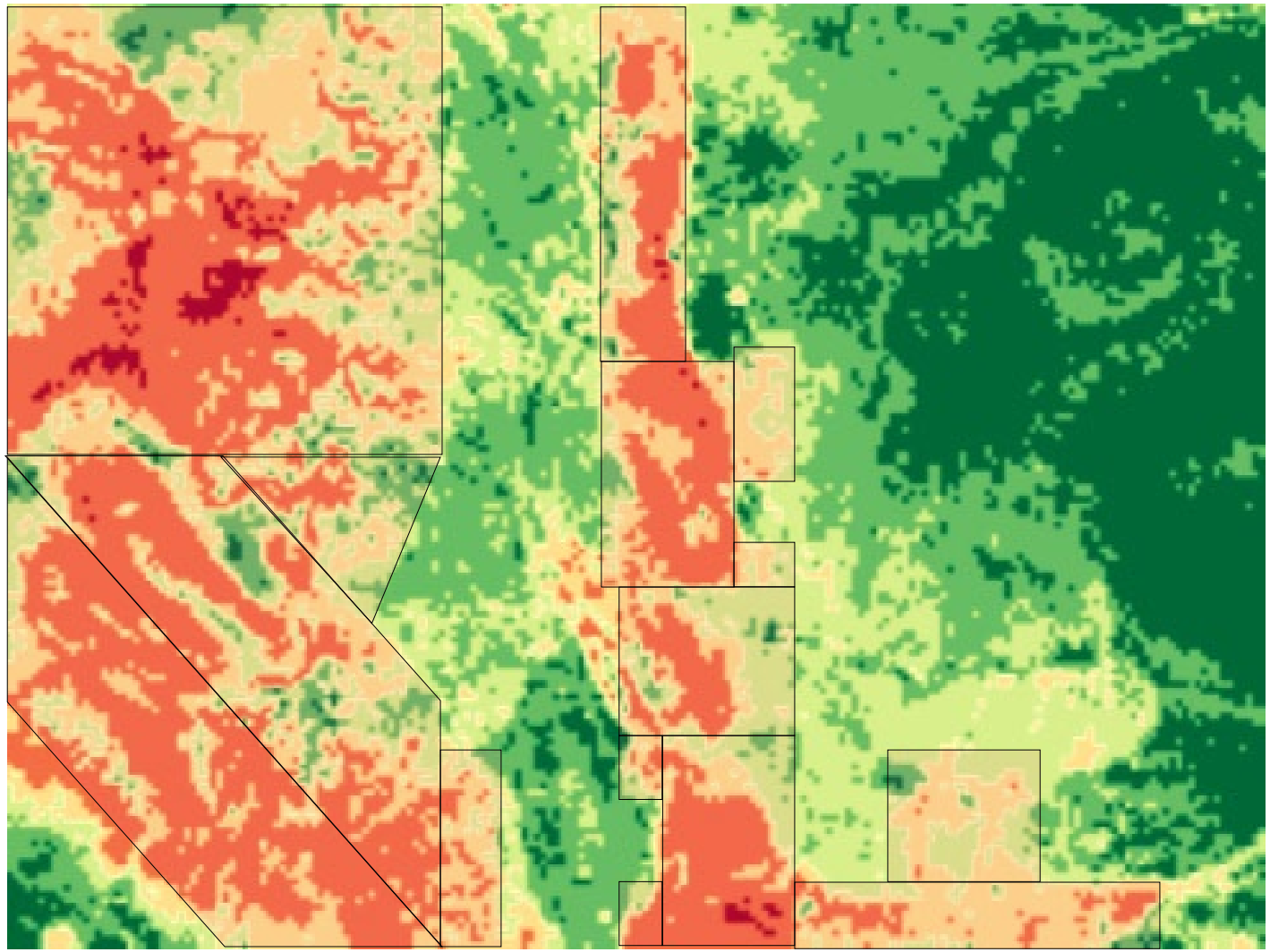
Important Note

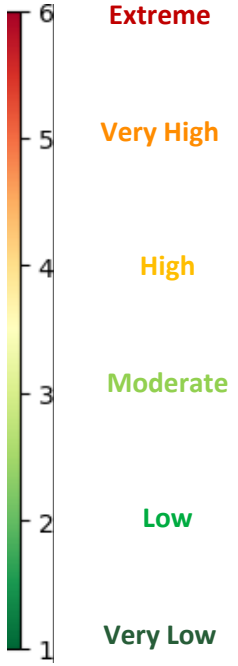
- While the model is highly granular (30m resolution), the full benefit of this granularity is not realized when the results are summarized at a zip code or county level.

[1]: From the US Forest Service's website. Source: Guy Carpenter

COLORADO WILDFIRE MAP (1/2)

High-risk areas are composed of 2 bands that cross the state on the North-South axis





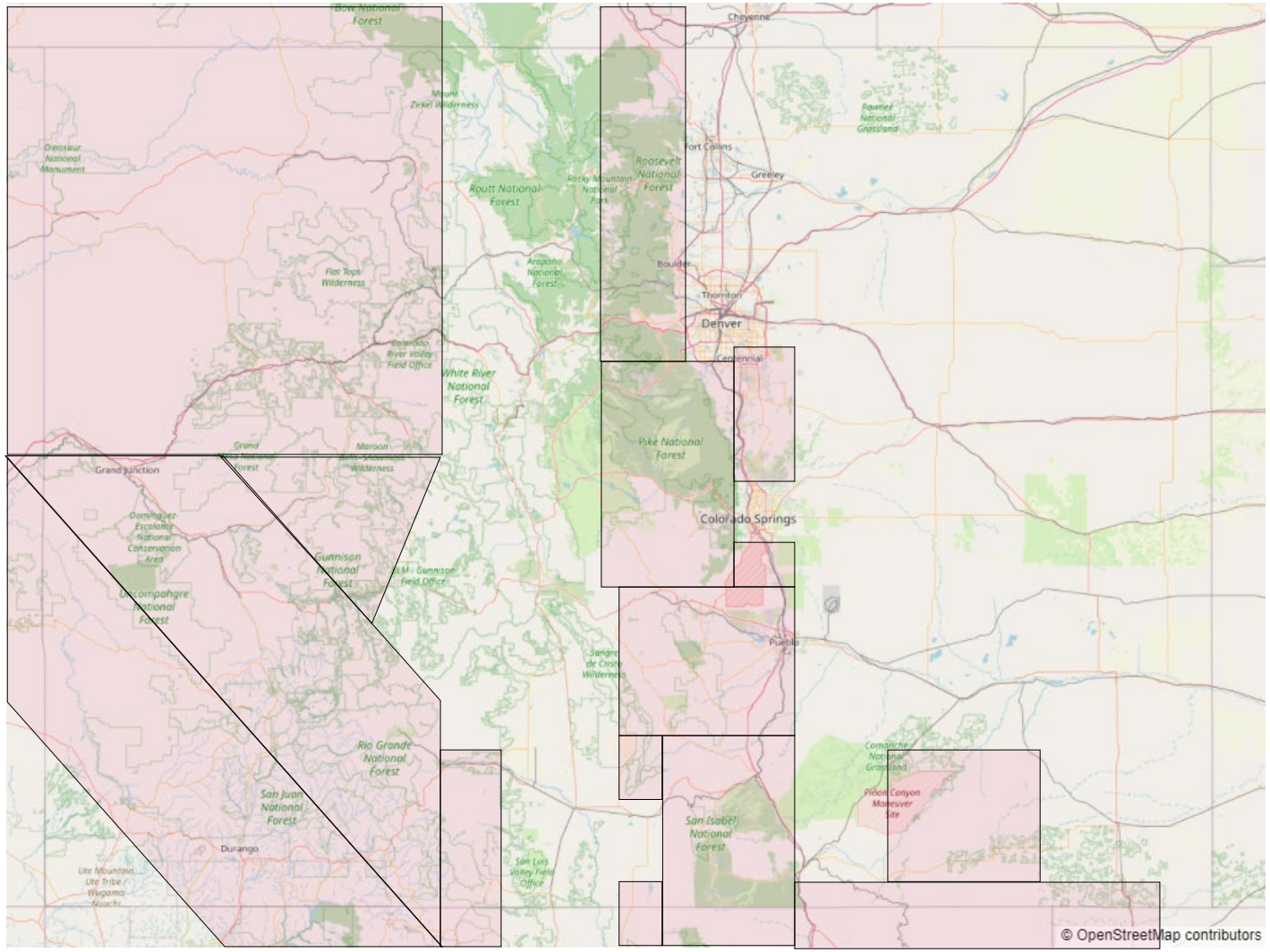
- This map shows the GC Wildfire Risk Score allocation for the state of Colorado.
- Per the model, several Colorado regions are classified as High risk or above.
- These same regions are highlighted on Open Street Map in the next slide, making it easier to visualize areas of interest

This is a downscaled version of the original map for illustrative purposes; the real map has a 30m resolution.

Source: Guy Carpenter, Oliver Wyman Analysis

COLORADO WILDFIRE MAP (2/2)

The Eastern band runs very close to the densely populated areas of Denver & Colorado Springs.



Source: Guy Carpenter, Oliver Wyman Analysis

ESTIMATION OF WILDFIRE EXPOSURE BY ZIP CODE

The detailed wildfire map has been translated at the Zip Code level using satellite imagery

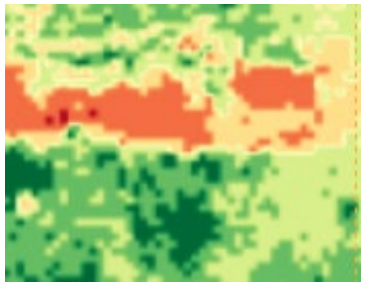
1. Microsoft Building Footprints

Estimation of all building structures in the US using AI & Satellite imagery.

https://www.microsoft.com/en-us/maps/building-footprints

2. Localization of buildings on the wildfire map

All buildings get located on GC's wildfire map



3. Wildfire score assignation

Each building receives a score based on the area of the wildfire map they fall into.

4. Percentage of Structures in High to Extreme Areas*

The proportion of buildings with a wildfire score of "high or above" within a Zip Code is used to assess the wildfire exposure in that area.

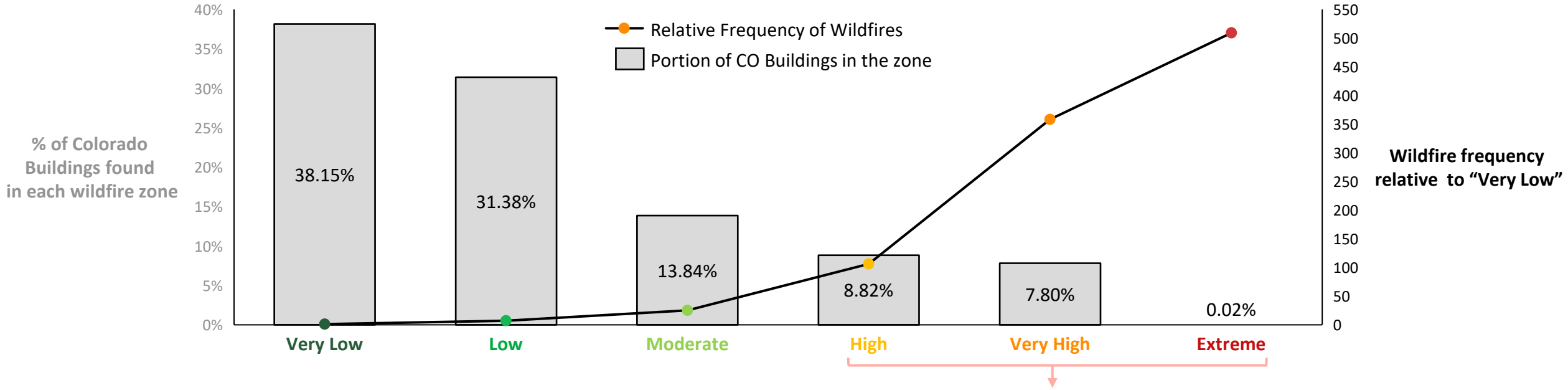
Zip Code	Total Structures	VeryLow (1)	Low (2)	Moderate (3)	High (4)	VeryHigh (5)	Extreme (6)	High-or-Above Pct.
80002	5907	78%	22%	0%	0%	0%	0%	**0%**
80104	9341	0%	3%	73%	25%	0%	0%	**25%**

Source: Guy Carpenter, Oliver Wyman Analysis

INTERPRETATION OF THE WILDFIRE SCORE

The wildfire map segments the US territory into zones based on their level of wildfire risk.

Relative frequency[1] of wildfire occurrence by zone



[1]: Frequency vs Intensity of Wildfires

In practice, the "danger" associated with wildfires in a given area depends on both the **frequency of ignitions** and the resulting **intensity of the fire**.

While both are considered in the determination of the score, only the frequency piece is depicted above. It means that in practice, the relative "danger" between "Very Low" and "Extreme" is probably even larger than depicted on this graph.

High-or-Above Areas

Wildfire risk grows exponentially as we advance through the zones defined by the model.

The risk starts becoming more material once we reach the "High" zone and above; this represents 16.64% of building structures in Colorado (estimated with satellite imagery - includes commercial).

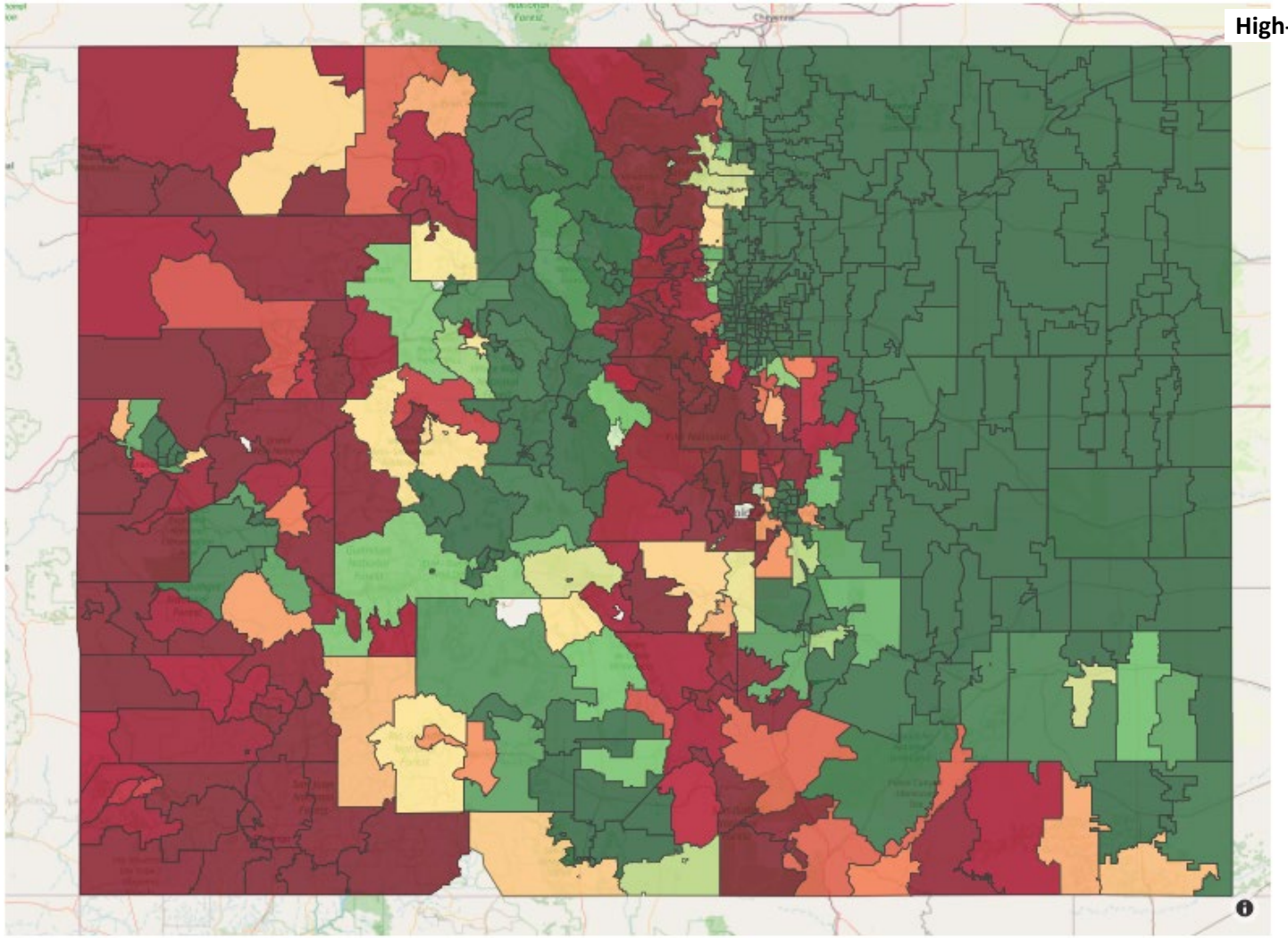
As such, we will define wildfire exposure as the % of buildings found in a high-or-above area in a given region (e.g., zip code, county) over the course of this study.

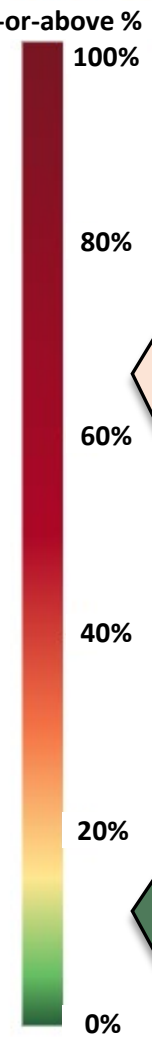
Note that the wildfire frequencies and building % shown here are measured very precisely at the individual building level (i.e., prior to combining information at the ZIP code or county level).

Source: Guy Carpenter's review of 2000-2019 US wildfires, Oliver Wyman Analysis

PERCENTAGE OF BUILDINGS IN "HIGH-OR-ABOVE" AREAS BY ZIP CODE

This Zip Code-level map will allow us to compare wildfire exposure with zip code-level data collected from carriers.





Zip Code-level Scores

This representation of wildfire risk at the zip code level will allow us to measure potential correlation trends in insurance availability & affordability.

We will compare this map with areas where industry data highlights significant shifts in average premium & total exposure sold (collected at the Zip Code level).

Color Scale Disclaimer

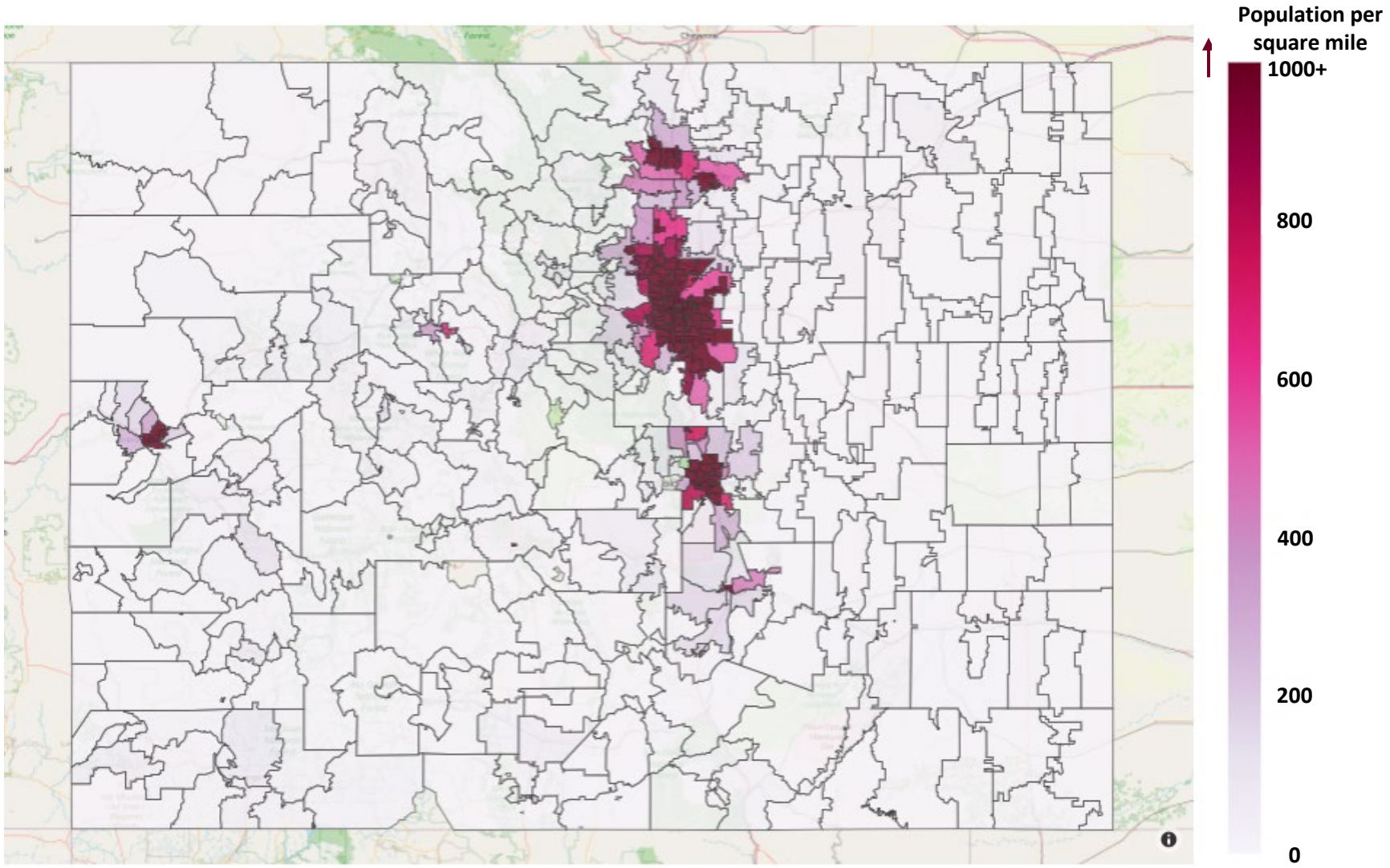
Any ZIP code not depicted with the darkest shade of green presents **some** exposure to areas with high-or-above risk of wildfire.

Note: Blank shadings indicate areas where a score was not available. Different ZIP code extraction dates between GC and OW are causing a handful of discrepancies.

Source: Guy Carpenter's wildfire risk score, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

COLORADO POPULATION DENSITY

Most of Colorado's large cities lie on the north-south axis right beside the wildfire band.



Proximity with densely populated areas

This map highlights that the easternmost band of wildfire risks runs very close to the densely populated areas of Fort Collins, Denver & Colorado Springs.

The edges of Denver & Colorado Springs, which are materially exposed to wildfire risk, still have a quite high density of population.

As such, in the event where insurance carriers would be reassessing their appetite for wildfire risk, this could have an impact on a material group of Colorado homeowners.

Source: ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

04

QUANTITATIVE ANALYSIS: AVAILABILITY & AFFORDABILITY

METHODOLOGY SUMMARY

These two metrics are key indicators of the availability/affordability situation in the state

WRITTEN UNITS TRENDS

- "Written units" represents the number of homes for which insurance policies are sold each month.
- For "Homeowners" policy types, one written unit represents one personal property insured for one year (e.g., one HO-3 policy).
- An industry-wide decrease in written units would indicate that fewer households are protected by insurance policies year-over-year.

VS

AVERAGE PREMIUM TRENDS

- Average premium is defined as Written Premiums / Written Units.
- It represents the average annual premium per written unit.
- Carriers will increase rates when in their perception, the current premium will no longer be high enough to cover the projected loss and expense levels.
- For example, this would happen if actuarial analyses highlight an increasing frequency and/or severity of losses vs prior estimates.

ADDITIONAL REPORTING CONSIDERATIONS

- **"Homeowners" policy types only**: The following exhibits are specifically focused on pure homeowner policies (i.e., excluding Renters & Condos).
- **Year-to-date figures**: These exhibits contain data from January through October for each year.
- **Group-level figures**: The data call was made at the company level, but then rolled up at the group level for analytical purposes. Each group only contains the volume from its underlying entities writing more than $5M in direct premiums in the state of Colorado.
- **Top 5 carrier groups**: Where applicable, any reference to "Top 5 Carrier groups" is intended to represent the 5 largest groups in the state: State Farm, Liberty Mutual, USAA, American Family & Allstate. In 2021, these 5 groups represented 65% of the "Homeowners Multi-Peril" market in Colorado.[1]

Please not that additional details regarding the surveying methodology and subsequent manipulations can be found in Section 6 of this report.

[1]: S&P Market Intelligence

INDUSTRY YEAR-TO-DATE TRENDS

Recent trends in the homeowners market highlight significant premium increases over the recent years.

Industry year-to-date variations (Jan-Oct) of the various metrics surveyed:

Year	Written Premiums Growth (%)	Written Units Growth (%)	Avg. Premium Growth (%)
2020	13.52%	6.35%	6.75%
2021	10.73%	1.63%	8.96%
2022	16.00%	1.01%	14.84%

Premiums are growing at an accelerating pace

The average premium's pace of increase is accelerating, now approaching +15% on a YTD basis.

Carriers may be implementing pricing corrections to their homeowner portfolio given the profitability struggles highlighted earlier.

These figures are also likely influenced by the high inflationary environment.

Industrywide growth in insured exposures has significantly tapered off over the last 2 years

In a saturated homeowner insurance market like the US, we would expect the homeowner insurance industry to grow in alignment with the market of new housing developments reaching the market. We would also expect the industrywide growth to be relatively steady year-over-year.

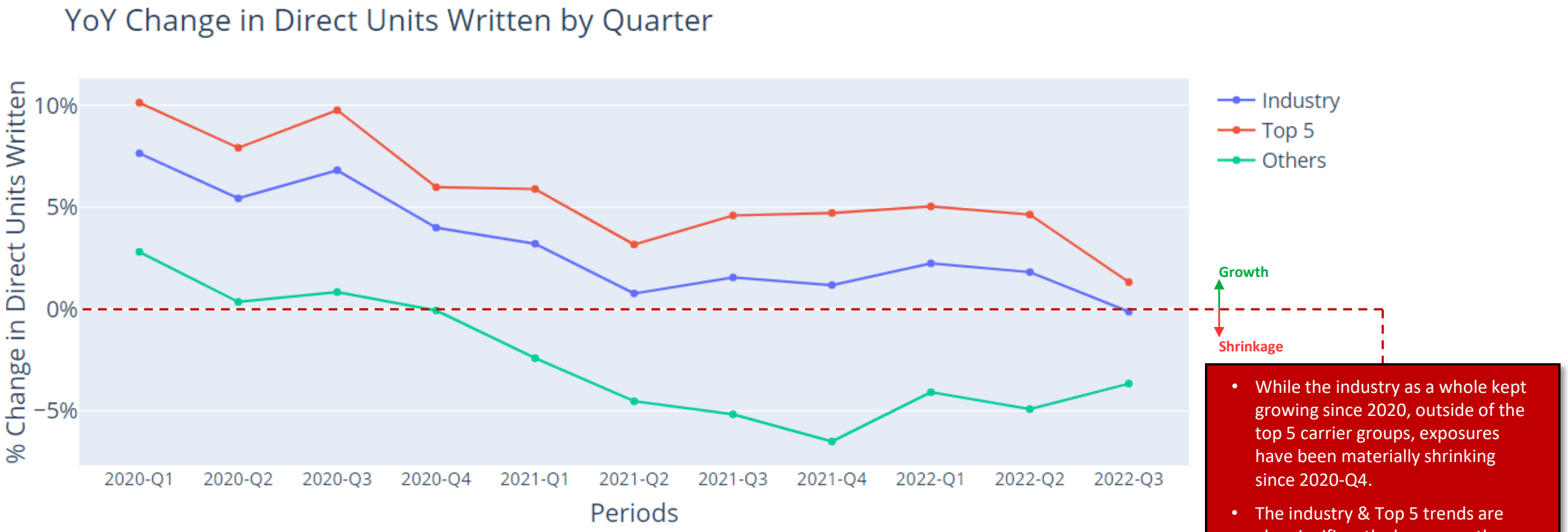
However, in Colorado we observe a material shift in the figures over the last 2 years. More research into the Colorado housing trends would be required to fully understand if 2020 is the outlier or if 2021 & 2022 are. These figures may also be skewed to some extent by the COVID-19 pandemic.

This could be an indicator that some carriers are reviewing their appetite within the market, and that the risks being cancelled are not all picked up by other carriers.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Oliver Wyman Analysis

INDUSTRY YEAR-OVER-YEAR UNIT GROWTH BY MONTH

Outside of the top 5, carriers have been shrinking their exposures over the recent year, leading to market consolidation.



- While the industry as a whole kept growing since 2020, outside of the top 5 carrier groups, exposures have been materially shrinking since 2020-Q4.
- The industry & Top 5 trends are also significantly down over the period, just now reaching 0% growth for the first time in 2022-Q3.
- Larger concerns may lie ahead if the largest carrier groups are also starting to reassess their appetite.

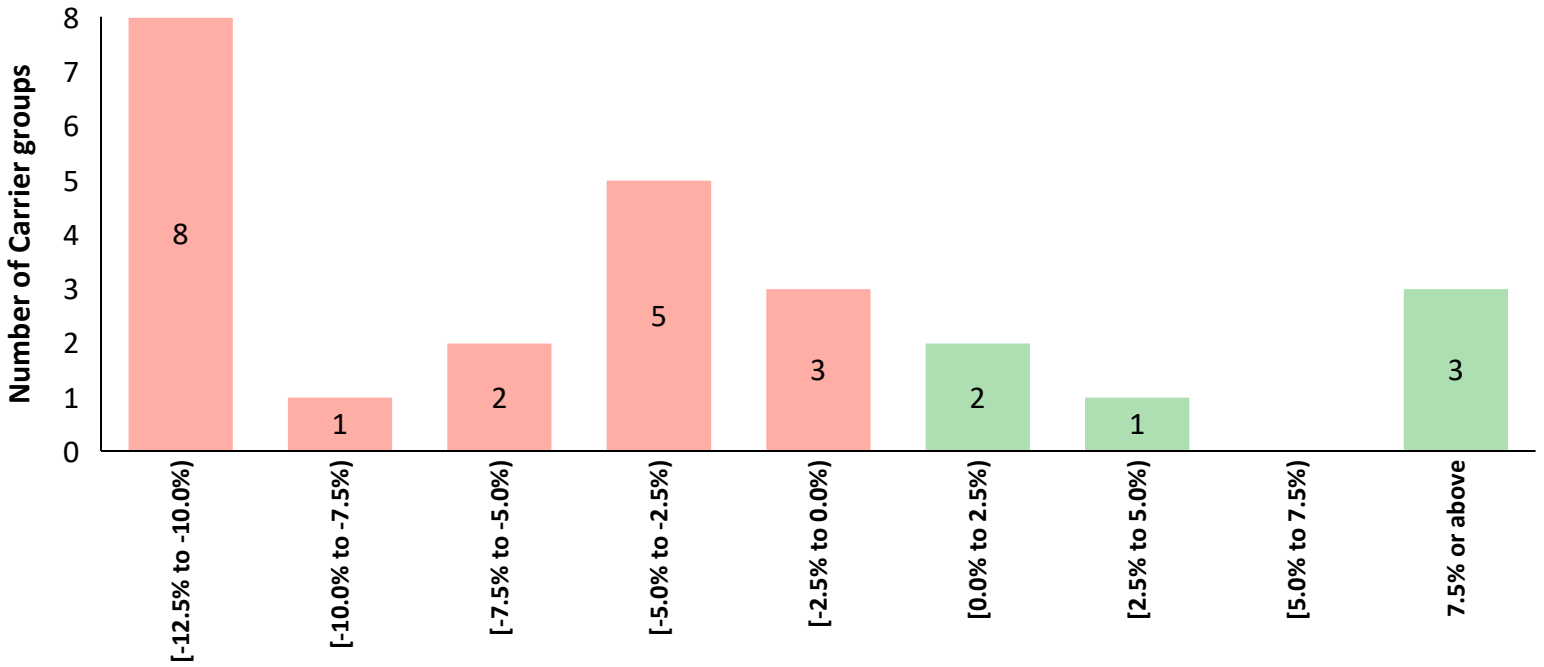
A market consolidation is taking place in Colorado; the largest carrier groups keep taking a bigger piece of the pie.

Source: Colorado “Homeowners MP” data surveyed from carriers as-of October 2022, filtered on “Homeowners” policy type, Oliver Wyman Analysis

DISTRIBUTION OF EXPOSURE VARIATIONS BY CARRIER GROUP (2022-YTD)

A majority of carrier groups are currently shrinking their unit counts in Colorado, offset by growth under some larger brands.

Distribution of variation in written units by carrier group – 2022 year-to-date



% of variation in direct units written – 2022 year-to-date

Summary Statistics:

Minimum (0th percentile)	First Quartile (25th percentile)	Median (50th percentile)	Third Quartile (75th percentile)	Maximum (100th percentile)
-12.33%	-10.52%	**-3.83%**	-0.11%	61.48%

Most carriers are shrinking

Through October 2022 year-to-date, **76% of carrier groups have written fewer policies** than over the same period last year.

Furthermore, **32% of carrier groups are even down more than 10%** over the period.

Offset by some growing carrier groups

At the industry level exposures are still growing year-over-year as of October 2022.

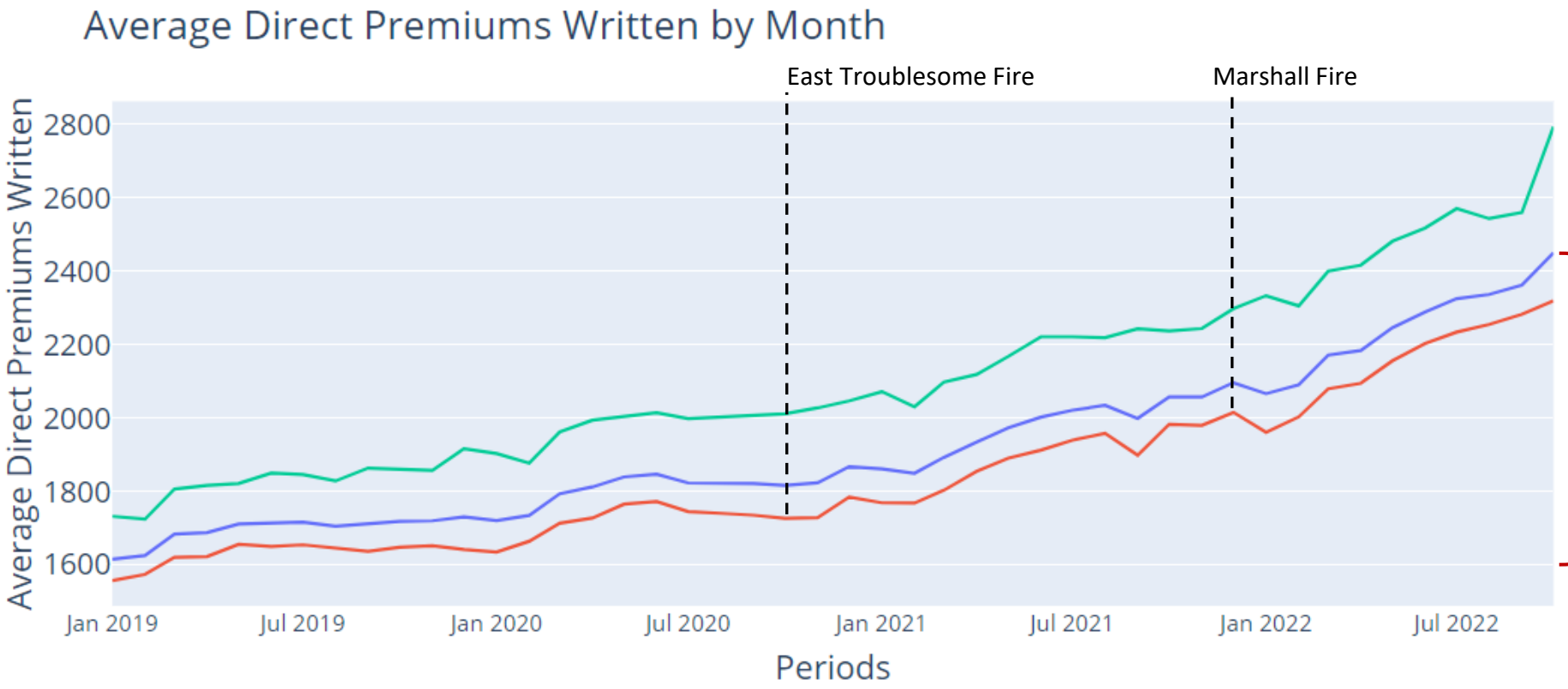
This highlights that the remaining minority of carrier groups are picking up a large amount of the risks that have left the other carriers.

Despite showing growth in 2022, the industry trend is clearly downwards quarter-over-quarter, which highlights that some of these groups may also be in the process of reassessing their appetite.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Oliver Wyman Analysis

INDUSTRY AVERAGE WRITTEN PREMIUM BY MONTH

Premiums have increased significantly in Colorado over the analysis period, and the pace has accelerated in 2022.



- The industry average premium is up +51.7% over the analysis period (46 months), or +11.5% annually.
- The increase since the beginning of 2022 is +18.6%, or +22.7% annually.

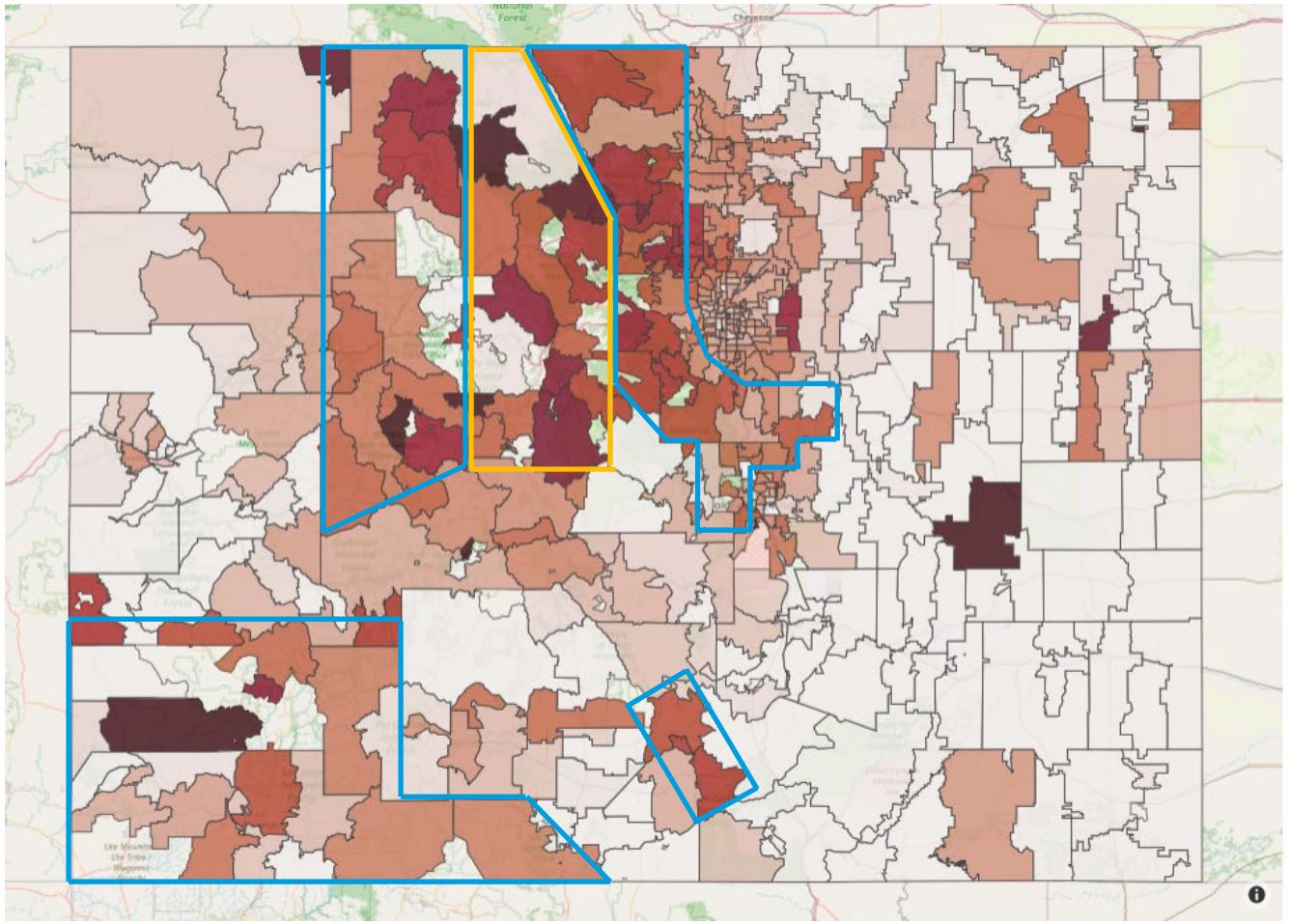
Recent wildfire activity, most notably the **East Troublesome & Marshall fires**, appear as inflection points on the graph; each time leading to accelerated growth in average premium charged following the event.

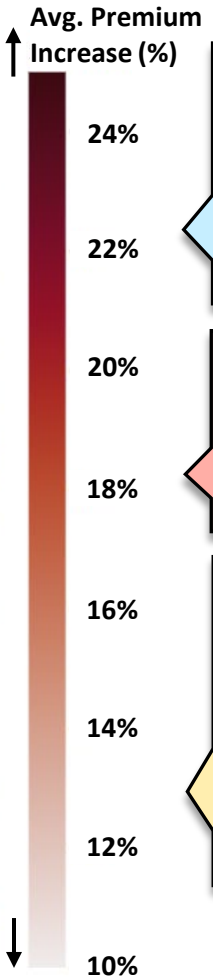
Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Oliver Wyman Analysis

GEOGRAPHICAL ANALYSIS OF PREMIUM INCREASES

Larger rate hikes appear correlated with the 2 bands of wildfire risk, although the correlation is imperfect.

Increase in average premiums by ZIP Code – 2022 year-to-date





Correlation with wildfire bands

Upon visual inspection, it appears there is a link between the areas with the largest rate hikes and the two bands of wildfire risk that run along the state (broadly depicted in blue on the map).

Amplitude of the scale is moderate

However, it is worth noting that the amplitude of the scale of premium increases is moderate. The highest increases are not orders of magnitude above the average of the state.

Crossing of the low-risk band

However, it appears that the areas most impacted by premium increases cross into the low-risk band in between (broadly depicted in yellow on the map).

This may be due to considerations other than wildfire exposure or may be caused by a differing view of where the wildfire risk lies.

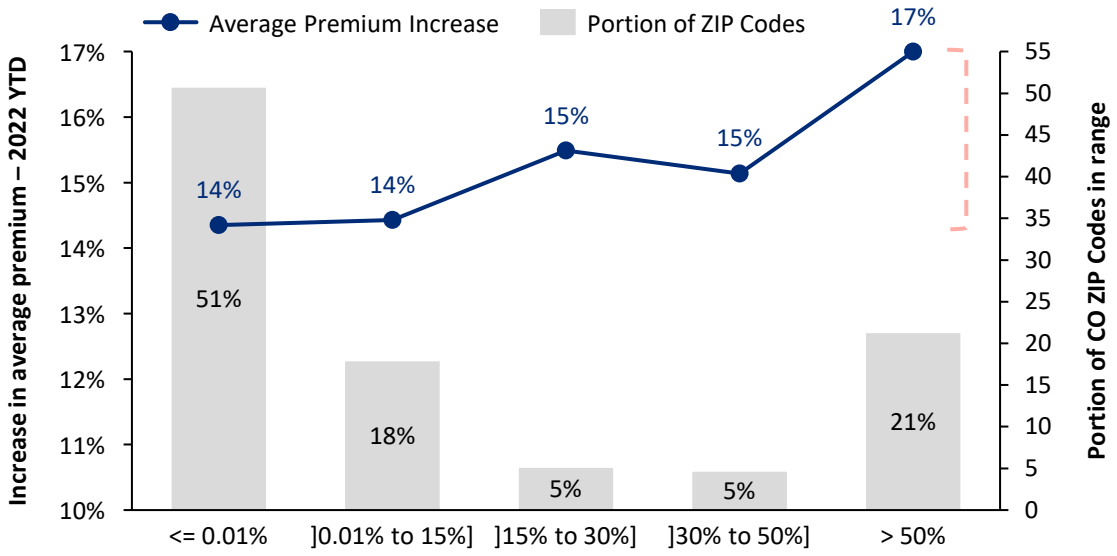
***Note**: blue/yellow color markings are there for reference only and as such are approximative.*

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

CORRELATION ANALYSIS: WILDFIRE RISK VS PREMIUM METRICS

Although there is some correlation, it seems rate hikes have a much broader scope than wildfire exposure.

Average premium increase vs wildfire risk in the ZIP code – 2022 YTD

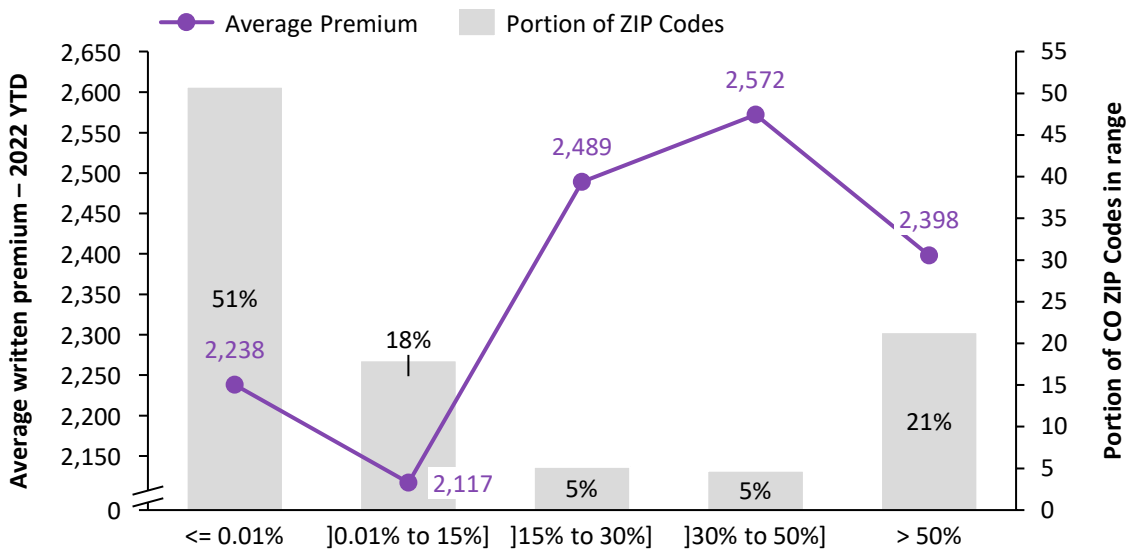


Portion of buildings in "high-or-above" wildfire area

Although this graph highlights a positive correlation between the size of premium increases and the exposure to wildfire risk, it is important to note that the amplitude **between the smallest and the largest increases remains relatively small (+14% to +17%)**.

This suggests that the rating actions currently taking place in Colorado are probably much broader in scope than the wildfire peril alone, although there seems to be some segmentation to that regard.

Average premium vs wildfire risk in the ZIP code – 2022 YTD



Portion of buildings in "high-or-above" wildfire area

It is also clear that regions with material wildfire exposure (15%+ of buildings in high-risk areas) tend to pay more for insurance, which highlights that wildfire exposure may be factored in the price of several carriers.

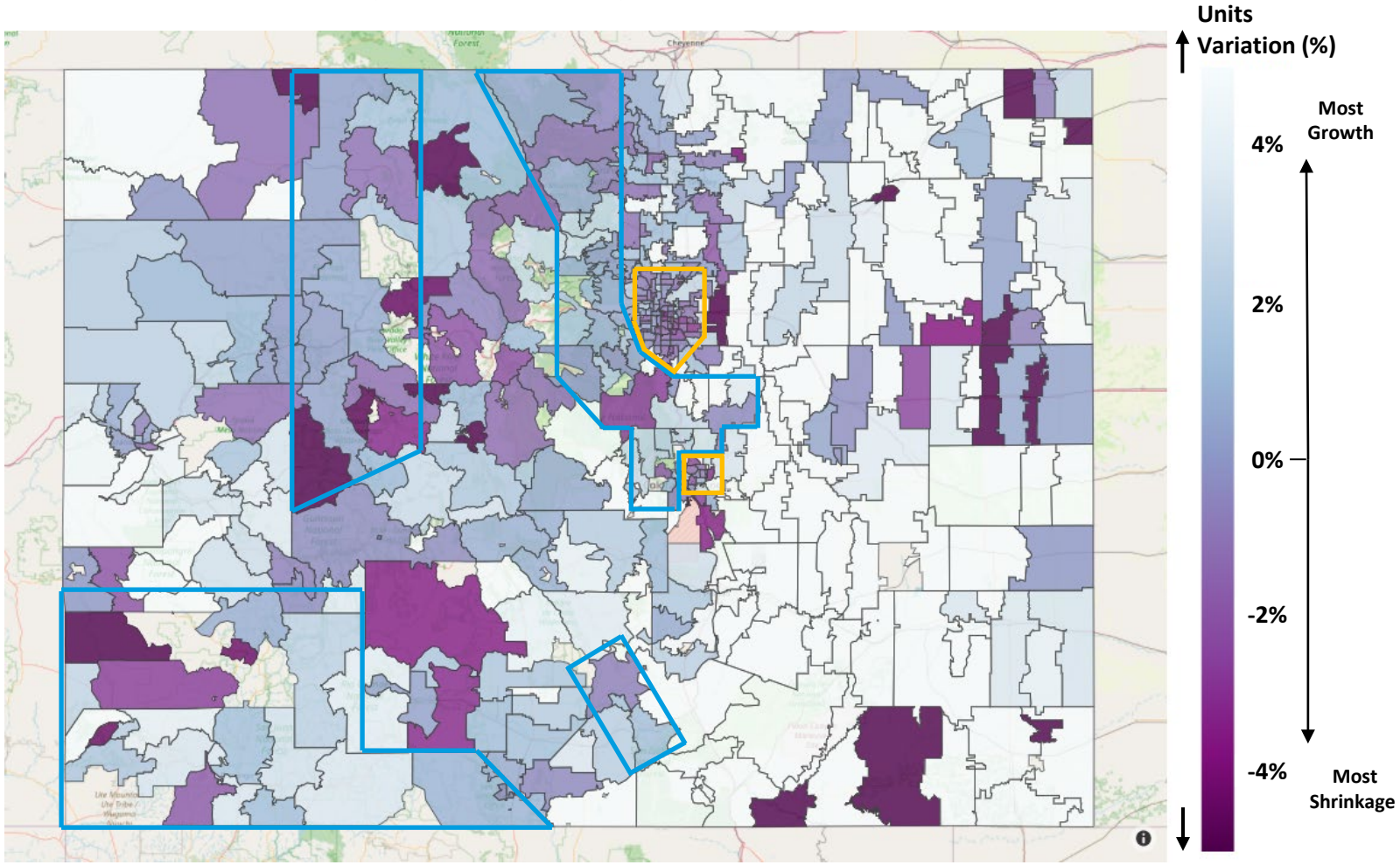
However, It is important to note that this analysis is only **one-dimensional**. In practice, a variety of information is used by insurers to set insurance premiums, such as building features and cost of living. This information may differ greatly between wildfire areas and the rest of the state.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Guy Carpenter's wildfire risk score, Oliver Wyman Analysis

GEOGRAPHICAL ANALYSIS OF EXPOSURES TRENDS

Correlation between units growth/shrinkage and wildfire risk is not as clear.

Variation in written units by ZIP Code – 2022 year-to-date



Correlation with wildfire bands

The correlation with wildfire risk is a lot less clear when looking at the growth/shrinkage in written units.

Pockets of shrinkage are frequently found outside the bands, sometimes even quite far from them.

Shrinkage observed in urban areas and other low-risk areas

One very notable difference between wildfire risk and variations in written units is the situation in urban areas. A lot of purple (shrinkage) can be observed inside Denver and Colorado Springs, although the wildfire exposure is very low.

Multiple other shrinkage pockets can be found in the eastern half of the state, which also has a very low wildfire exposure. However, these areas have such low population that year-over-year variations may appear large in %.

This may also be an indicator of underwriting measures focused on things other than wildfire risk being at play in the state.

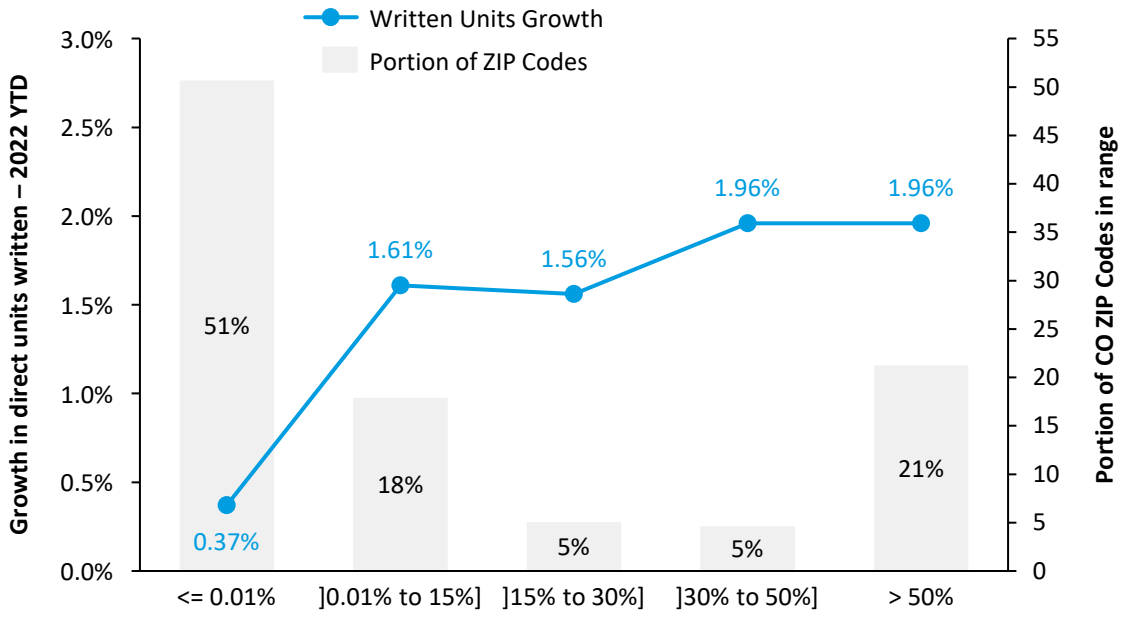
***Note**: blue/yellow color markings are there for reference only and as such are approximative.*

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

CORRELATION ANALYSIS: WILDFIRE RISK VS UNIT METRICS

In fact, a more thorough analysis of the correlation does not suggest significant shrinkage in high-risk areas.

Growth in written units vs wildfire risk in the ZIP code – 2022 YTD



Unexpectedly, it does not seem like high-risk area are more subject to shrinkage in exposures.

While some policyholders may be facing significant restrictions in these areas at the carrier level, this is not the case at the industry level.

Possible Interpretations

1. Localization of new housing developments

If there is a higher relative concentration of new housing developments in some of the more exposed areas, this could also lead to more growth at the industry level in these zones.

2. Volatility

High-risk areas are generally less densely populated, as they tend to be more rural. Small movements may trigger large variations in % on a year-to-year basis.

Also, if these regions were already largely avoided by carriers, the insurance take-up rate would be low, further magnifying the potential for volatility.

3. Pricing Sophistication

It is possible that insurers have improved their wildfire modeling capabilities over the recent years, allowing them to set prices commensurate with risk in regions they used to completely avoid.

Alternatively, more sophisticated models may may allow them to further refine their definition of "high risk" areas, to better identify those that are truly outside of their respective risk appetites.

4. Risk Awareness

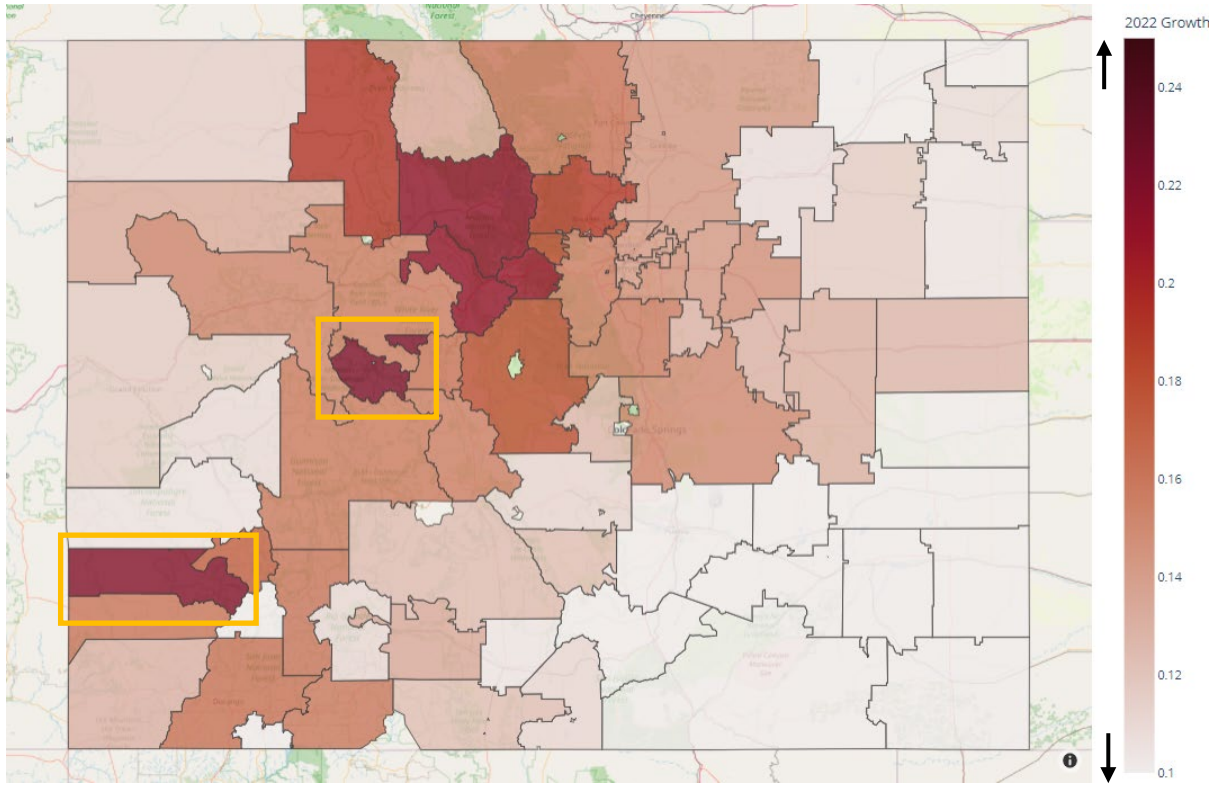
Recent wildfire activity may have increased the risk awareness of the population, leading to an increase in the take-up rate of homeowners insurance in the high-risk areas.

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, Guy Carpenter's wildfire risk score, Oliver Wyman Analysis

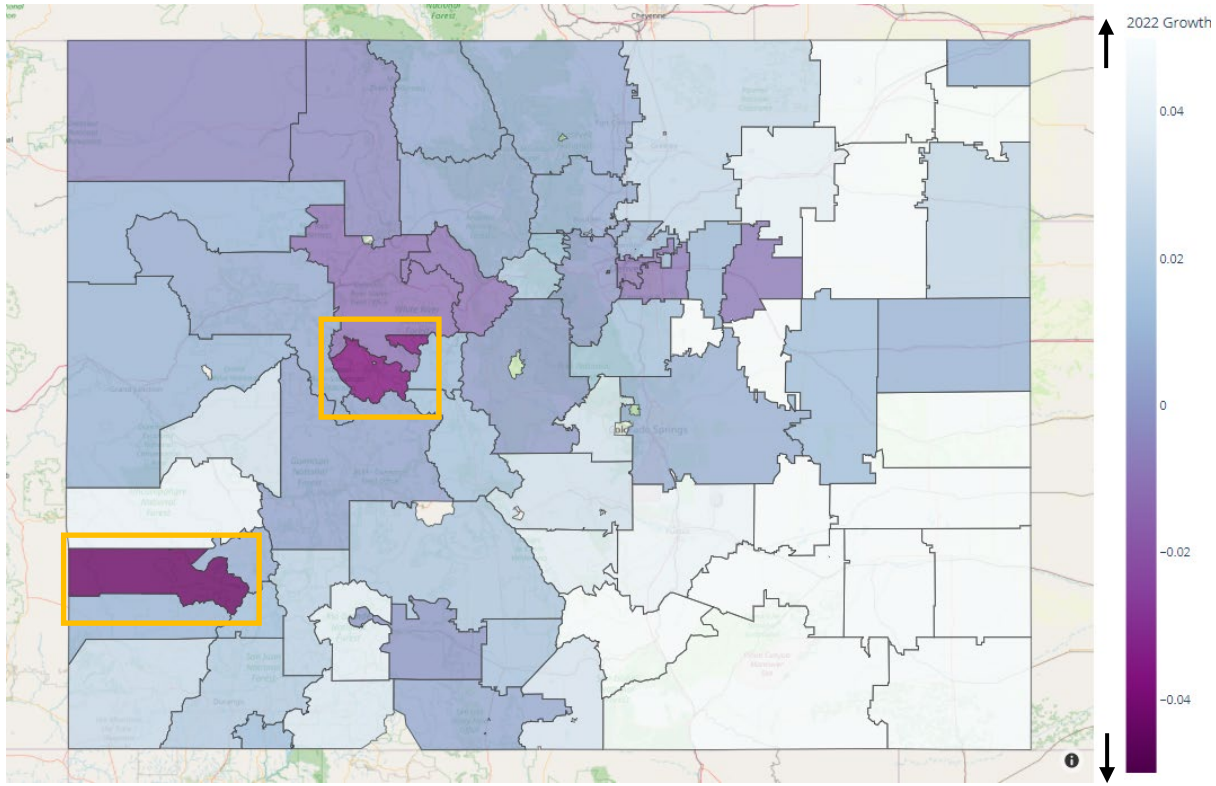
GEOGRAPHICAL ANALYSIS OF COUNTY UNITS GROWTH & AVERAGE PREMIUM INCREASE

Pitkin & San Miguel Counties have been the most impacted counties under each metric.

Increase in average premiums by County – 2022 year-to-date



Growth/Shrinkage in written exposures by County – 2022 year-to-date



Disclaimer: Data was collected at the ZIP code level. County-level figures and shapes were estimated using the official county assignation of each ZIP code (imperfect).

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

COUNTY-LEVEL RANKINGS OF AVERAGE PREMIUM INCREASE (2022 YTD)

County	Average Premium Increase (2022 YTD)	Rank
Pitkin County	22.08%	1
San Miguel County	21.79%	2
Grand County	21.26%	3
Summit County	21.10%	4
Clear Creek County	20.84%	5
Routt County	19.19%	6
Boulder County	18.99%	7
Gilpin County	18.29%	8
Park County	17.98%	9
Broomfield County	17.51%	10
Ouray County	17.16%	11
La Plata County	16.21%	12
Lake County	16.19%	13
Larimer County	16.10%	14
Dolores County	16.04%	15
Hinsdale County	16.04%	16
Archuleta County	15.92%	17
Gunnison County	15.77%	18
Eagle County	15.72%	19
Douglas County	15.70%	20
Chaffee County	15.65%	21
Jefferson County	15.61%	22
Garfield County	15.26%	23
El Paso County	15.05%	24
Arapahoe County	14.69%	25
Weld County	14.36%	26
Adams County	14.26%	27
Denver County	13.91%	28
Jackson County	13.45%	29
Rio Grande County	13.41%	30
Rio Blanco County	13.31%	31
Lincoln County	13.05%	32
Conejos County	12.72%	33
Costilla County	12.66%	34
Custer County	12.56%	35
Teller County	12.25%	36
Kit Carson County	11.97%	37
Elbert County	11.87%	38
Mesa County	11.66%	39
Moffat County	11.64%	40
Lincoln County	10.87%	41
Fremont County	10.86%	42
Jackson County	10.76%	43
Saguache County	10.61%	44
Delta County	10.57%	45
Alamosa County	10.23%	46
Montrose County	10.19%	47
Phillips County	10.00%	48
Montrose County	10.53%	49
Yuma County	10.34%	50
Alamosa County	10.33%	51
Huerfano County	9.87%	52
Pueblo County	9.35%	53
San Juan County	9.25%	54
Sedgwick County	9.24%	55
Logan County	7.35%	56
Prowers County	6.88%	57
as Animas County	5.28%	58
Cheyenne County	4.56%	59
Bent County	3.84%	60
Kiowa County	0.59%	61
Otero County	-1.76%	62
Crowley County	-2.59%	63
Baca County	-5.15%	64

Disclaimer: Data was collected at the ZIP code level. County-level figures were estimated using the official county assignation of each ZIP code.

--- State Average

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

COUNTY-LEVEL RANKINGS OF VARIATION IN WRITTEN UNITS (2022 YTD)

County	Written Units Variation (2022 YTD)	Rank
San Miguel County	-4.36%	1
Pitkin County	-3.60%	2
Eagle County	-1.08%	3
Summit County	-1.03%	4
Arapahoe County	-0.77%	5
Denver County	-0.76%	6
Moffat County	-0.42%	7
Routt County	-0.35%	8
Rio Grande County	0.02%	9
Jefferson County	0.18%	10
Park County	0.18%	11
Gunnison County	0.42%	12
Grand County	0.59%	13
Broomfield County	0.61%	14
Jackson County	0.62%	15
Conejos County	0.63%	16
Garfield County	0.65%	17
Larimer County	0.73%	18
Boulder County	0.75%	19
Ouray County	0.81%	20
El Paso County	0.88%	21
Kit Carson County	0.99%	22
Mesa County	1.01%	23
Dolores County	1.05%	24
Sedgwick County	1.06%	25
Rio Blanco County	1.06%	26
Adams County	1.15%	27
Lake County	1.20%	28
Gilpin County	1.33%	29
San Juan County	1.41%	30
Lincoln County	1.44%	31
Douglas County	1.56%	32
Chaffee County	1.56%	33
Alamosa County	1.65%	34
Clear Creek County	1.78%	35
Saguache County	1.81%	36
La Plata County	2.04%	37
Hinsdale County	2.38%	38
Yuma County	2.63%	39
Weld County	2.74%	40
Montezuma County	2.81%	41
Fremont County	3.13%	42
Delta County	3.16%	43
Teller County	3.26%	44
Costilla County	3.36%	45
Archuleta County	3.54%	46
Custer County	3.91%	47
Mineral County	3.92%	48
Morgan County	4.15%	49
Montrose County	4.29%	50
Pueblo County	4.43%	51
Prowers County	4.99%	52
Elbert County	5.54%	53
Phillips County	5.77%	54
Washington County	6.15%	55
Huerfano County	7.73%	56
Cheyenne County	7.88%	57
Logan County	8.32%	58
Bent County	10.45%	59
Kiowa County	11.14%	60
Las Animas County	13.00%	61
Baca County	17.31%	62
Otero County	17.62%	63
Crowley County	19.12%	64

Disclaimer: Data was collected at the ZIP code level. County-level figures were estimated using the official county assignation of each ZIP code.

- - - State Average

Source: Colorado "Homeowners MP" data surveyed from carriers as-of October 2022, filtered on "Homeowners" policy type, ESRI dataset of U.S. ZIP Codes (from ArcGIS), Oliver Wyman Analysis

05

QUALITATIVE ANALYSIS: PRICING, UNDERWRITING & AVAILABILITY PROGRAMS

KEY TAKEAWAYS FROM INDUSTRY SURVEY – UNDERWRITING AND PRICING

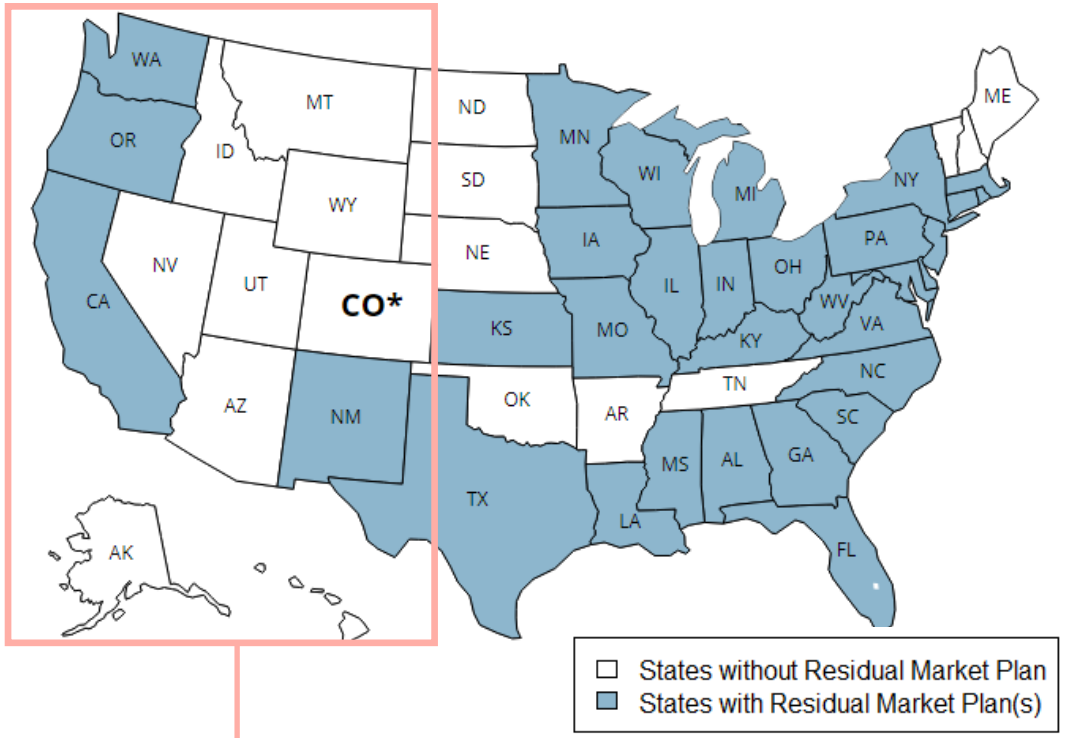
Underwriting Appetite	In general, carriers report not actively attempting to shrink the volume of homeowners business written in Colorado. However, some carriers have new business restrictions and non-renewal strategies that are impacting properties with the highest level of wildfire risk.
Pricing Sophistication	Some carriers report revamping their pricing strategies due to recent Colorado wildfire activity; some do not. Some of these efforts were already underway due to wildfire activity in other states. Wildfire is increasingly being filed as a separate peril, leading to the ability to apply discounts and surcharges specifically based on the home's wildfire risk characteristics.
Use of Wildfire Scores	Wildfire risk scores are widely used to inform decisions regarding eligibility, premium rating, non-renewals, and/or loss mitigation requirements.
Reinsurance Costs	Most carriers anticipate reinsurance premiums to materially increase in 2023 (across all states and lines). This will impact premiums charged for Colorado Homeowners policies but will generally not impact carriers' appetite to write these policies.
Mitigation Measures	Carriers are increasingly considering wildfire mitigation measures (such as clearing of combustible materials near homes and using fire-resistant building materials) in underwriting decisions. Focus on these items will likely make it easier for customers to find insurance coverage and will also increase the likelihood of a more favorable outcome in the event of a wildfire.

PROPERTY RESIDUAL MARKET PLANS

33 jurisdictions have Residual Market Plans for Property

These Plans provide a market for difficult-to-insure risks.

*Many of these plans are commonly referenced as FAIR Plans – (**F**air **A**ccess to **I**nsurance **R**equirements)*



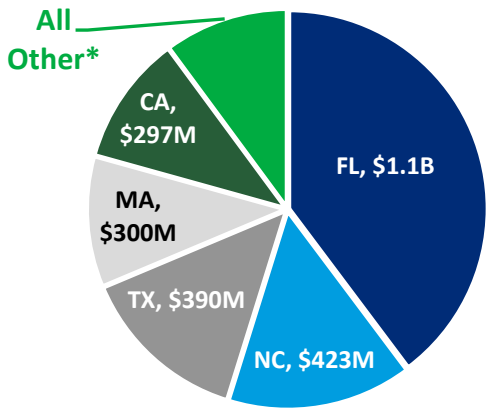
There are 36 Plans; some states have more than one Plan.

Several states in the western region (at risk of wildfires) do not have a residual market plan for property. (MT, ID, WY, NV, UT, CO, AZ, AK). This creates a potential opportunity to collaborate with other states if CO develops a Plan.

History and Objectives of Property Residual Market Plans

- The first residual market plans were created to cover perils related to civil unrest in urban areas, amid allegations that the insurance industry was discriminating against homes in areas deemed "undesirable" (redlining).
- Subsequently, numerous other residual market plans were created to cover perils related to extreme weather events in coastal markets.
- Residual market plans were generally established by legislation in the 1960s and 1970s. No new residual market plans have been established in the past several decades.
- Size and market share of these plans varies widely, largely depending on whether the plans offer pricing and policy features that are competitive with the voluntary market.

2020 Habitational Premium Volume in Residual Market Plans



**The largest state in the "All Other" group is LA at $55M.*

Source: "2022 Compendium of Property Insurance Plans" by The Property Insurance Plans Service Office, Inc.

MARKET CONSIDERATIONS – RESIDUAL MARKET PLANS

Feedback from PIPSO, Insurers, and APCIA includes the following.

PRICING & UNDERWRITING

- Rates should either be set **to actuarially sound levels or set to be x% higher than available rates in the voluntary market**. (It has been cited that these differentials have been set in ranges from 10% to 25%, and in some cases, 10% may not be "high enough.") **Affordability** must also be considered.
- Price should be commensurate with risk, to **avoid large subsidization**. Be mindful of risk transferring to the insurance industry, the state, the taxpayers, and other insurance consumers (including those who live nowhere near the high-risk areas).
- **Underwriting guidelines are critical and should ensure proper incentives** (such as loss mitigation measures). A **detailed application, robust inspection process, and targeted use of surcharges and/or higher deductibles for less desirable risks** are highly encouraged.
- Homes should be insured at a **minimum of 80% of replacement cost** as a measure to avoid the risk of underinsurance.

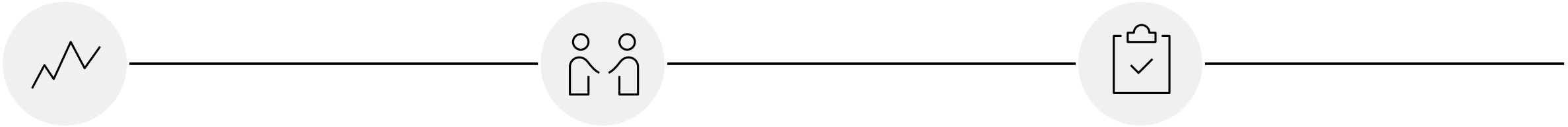
MARKET OF LAST RESORT

- A residual market plan should **not compete with voluntary carriers**; should be a **market of last resort**. Consider requiring **declinations from voluntary carriers** as part of eligibility criteria for Plan. Consider **limiting geographic scope** to high-risk areas with availability issues.
- Coverage options should **be limited in scope**, and **coverage limit options should be capped**. The product **should not be more attractive than a policy available in the voluntary market**.
- **Avoid inappropriate incentives** regarding unsustainable development practices, unwise land-use policies, and buildings that are not sufficiently well-constructed to withstand the risks.
- Some carriers expressed preference **for a properly functioning voluntary market** that provides customers choice (in the admitted market or in surplus lines companies) at an adequate price. If a residual market is being considered by policymakers, **evaluation should occur to determine whether the overall market environment in the state is hindering and/or discouraging insurers from writing higher-risk consumers.**

OPERATION

- Consider **using other states' Plans as servicing entities**; this can be an **effective expense control** and reduce start-up costs.
- Seek **sophisticated and diversified funding stacks** (e.g., retained layers, reinsured layers, industry assessments, etc.) that will help protect the Plan's longevity and reduce the impact to the broader market.
- **Depopulation programs** (a.k.a "Takeout Plans") should be considered. These programs incentivize carriers to insure policyholders that had previously been insured by the residual market plan. Such incentives can result in lower assessment levels for carriers that voluntarily depopulate the residual market plan.
- Carriers express a preference for **timely delivery** of annual participation ratios, quarterly financial statements, and quarterly member activity by plan year. Additionally, they prefer when there is **no ambiguity** regarding whether assessments can be passed onto policyholders.

OPERATIONAL CONSIDERATIONS – RESIDUAL MARKET PLANS



Plan Volumes are Cyclical

- Plans are in a reactive position relative to the actions and appetites of the voluntary market.
- Volumes may increase after a period of natural disaster which leads voluntary market to non-renew the riskiest policies in their portfolio.
- Volumes may then decrease as the voluntary market develops more innovative means of identifying favorable vs. unfavorable risks (e.g., big data, predictive modeling, etc.) and increases its appetite to selectively write policies in a risky segment.

Shared Services

- Opportunities for expense efficiency include outsourcing:
  - AIPSO (Automobile Insurance Plans Service Office) for rate filing services and web hosting
  - Well-established Plans (e.g., New York) for policy issuance and servicing
- PIPSO (Property Insurance Plans Service Office) provides services to its members, including: education, audits, conferences, distribution of ISO circulars, negotiating leverage with vendors, and compilation of industry reports.

Organizational

- Plans of Operation are generally on file with State Insurance Departments; PIPSO may be able to assist in providing several such documents for Colorado's reference.
- Many Plans originated with a Servicing Carrier Model (in which a voluntary carrier would issue and service policies and be reimbursed by the Plan for its expense).
- Over time, the vast majority of Plans have migrated to a Syndicate model, where the operations are handled by the Plan (or outsourced to another Plan). This change reduced overhead costs.

Source: Discussion with PIPSO

ADDITIONAL CONSIDERATIONS – RESIDUAL MARKET PLANS

Composition of Residual Market Plan

- Residential / Commercial / Both?
- Combined or Separate Plans?

Product Offering

- Consider the market being served. Strive for a product suitable for high-risk property-owners without taking unreasonable risk, competing with the voluntary market, or requiring a large subsidy.
- Explore the notion of high deductibles for wildfires (similar high hurricane deductibles).
- Most property residual market plans use standard policy forms (ISO/AAIS).

Participation and Cost Allocation

- Typically, carriers are assessed based on market share, sometimes adjusted for credits from depopulation programs. In states with depopulation programs, carriers can get credit against their assessments for voluntarily insuring homes that had previously been insured by the residual market plan.
- Some states allow industry assessments to be passed on to policyholders.

Underwriting Criteria

- Property residual market plans are generally not “take all comers” like Auto and Workers Compensation residual market plans.
- Many property residual market plans will not offer coverage to properties that are vacant or are subject to extreme risk due to poor maintenance or other risk factors.

Sources of Capital

- Policy premiums.
- Assessments to insurance carriers (based on market share).
- Some plans purchase reinsurance to enhance capacity.

Governing Committees

- Residual market plans generally have Governing Committees that typically include representation from insurance carriers, agents, and state regulators. Some governing committees also include other stakeholders and experts such as public representatives and property engineers.

Source: Discussion with PIPSO, PIPSO publications, carrier surveys.

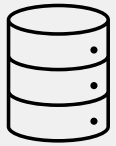
06

APPENDIX:
INDUSTRY SURVEY METHODOLOGY

DATA COLLECTED

All companies writing more than $5M direct Homeowners premiums in Colorado in 2021 were subject to this data call

The survey was sent to all subject companies on November 21, 2022, with a response deadline on December 16, 2022:



Data Collection Template (Quantitative Analysis)

Main Goals:

- Obtain a timely snapshot of industry trends, as it was anticipated that the situation is evolving quickly.
- Identify which areas of the state are the most problematic, if applicable.

Due to timeline limitations, scope was limited as follows:

- Homeowners Multi-Peril policies only, broken down by policy type.
- Data Fields readily available in carriers' standard reporting frameworks.

Type of data collected - at the Zip Code level and on a monthly basis:

- Premiums & Exposures: On a written, earned & in-force basis.
- Losses: On an accident-month basis.

Survey Questions (Qualitative Analysis)

Main Goals:

- Identify practices currently in place to limit coverage.
- Understand the recent trends in pricing sophistication, primarily as it relates to wildfire models.
- Identify the impact of recent wildfire activity on methodologies.

Themes surveyed:

- Current underwriting & pricing methodologies.
- Impact of reinsurance agreements on prices.
- Third-party vendors: CAT models & reconstruction costs.
- Perspective on availability & stability programs.

CARRIER GROUPS RESPONSE SUMMARY

The study includes 95.3% of the market, which we believe gives an accurate picture of the whole industry.

List of companies included in our study

Rank in the survey	Group Name	Companies Surveyed	Market Share Surveyed (2021)
1	State Farm	1	21.0%
2	Liberty Mutual	6	13.4%
3	USAA	4	11.7%
4	American Family Insurance	5	9.5%
5	Allstate Corp	7	8.9%
6	Farmers Insurance	5	7.9%
7	Travelers	3	6.3%
8	Nationwide	5	3.7%
9	Chubb	4	2.9%
10	Progressive	1	1.3%
11	CSAA Insurance Exchange	1	1.2%
12	AIG	1	0.9%
13	The Hartford	3	1.0%
14	Amica	1	0.9%
15	COUNTRY Financial	1	0.9%
16	Auto-Owners Insurance	1	0.8%
17	American National	1	0.7%
18	Southern Farm Bureau Casualty	1	0.5%
19	Tokio Marine	1	0.5%
20	Munich Re	1	0.4%
21	QBE	1	0.4%
22	Acuity A Mutual Insurance Co.	1	0.3%
23	Lemonade Inc.	1	0.2%
24	The Cincinnati Insurance Cos.	1	0.2%
25	California Casualty	1	0.2%

Source: S&P Market Intelligence, Oliver Wyman Analysis

Exclusions

During the survey process, some carrier groups initially reported figures that generated data integrity concerns (such as unrealistically high unit counts or premium volume). These surveys materially distorted the metrics analyzed in this study.

For the sake of time, only those with material market shares were contacted for resolution. At the time of writing this report, all large carrier groups subject to these concerns have provided amended surveys that meet our data integrity standards.

The remaining exclusions represent a 1.5% market share, which is immaterial in our view.

Data Not Received

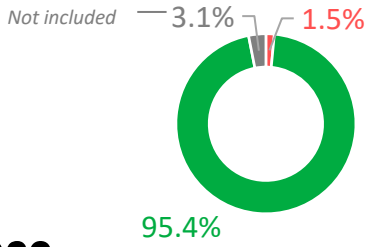
Only one carrier has failed to provide their survey at the time of writing this report, representing **0.4% market share**. It appears unlikely to have any material impact on our analysis.

Survey Status	Surveys #	Surveys %	Mkt Share %
Included	57	93.4%	95.3%
Excluded	3	4.9%	1.5%
Not Received	1	1.6%	0.4%
Not Surveyed	*n/a*	*n/a*	*2.7%*

DATA VALIDATIONS

While the overall validity of the surveys received is high, issues identified may have material impacts on our analysis

A. Average Premium Reasonability Check



$2,262

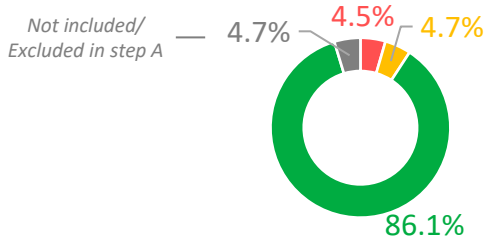
Average "pure" Homeowner premium (2022 YTD)

BELOW $650 AVERAGE PREMIUM
1.5% of Market Shares (2 Groups)

ABOVE $1440 AVERAGE PREMIUM
95.4% of Market Shares (25 Groups)

- Some carriers initially reported average premiums below $300 for "pure" homeowners (i.e., HO-3).
- This highlighted an issue where some carrier reported **unrealistic unit counts**.
- Largest carriers have been contacted for revision, smaller ones have been excluded from the analysis.

B. Written Premiums Reconciliation – NAIC[1]



90.4%

Proportion of <u>included</u> Mkt Shares that reconcile

MATERIAL DISCREPANCY IN 2021
4.5% of Market Shares

MATERIAL DISCREPANCY IN OLDER YEARS
4.7% of Market Shares

ALL YEARS RECONCILE (+/- 3.5%)
86.1% of Market Shares

- Largest discrepancy observed on valid surveys is of +22%.
- Discrepancies could impact the findings depending what is missing/in excess.

C. Other Exclusions

<u>PO Box vs Standard Zip Codes</u>

2%

Proportion of premiums reported in PO Box Zip Codes

- While the overall figure is low, some carriers reported up to 15% of their volume in PO Box Zip Codes.
- PO Box data has not been retained, as this study largely relies on geographical considerations.

<u>Non-Standard Products & other entries</u>

~0.02%

Proportion of premiums reported outside of Homeowners, Renters or Condos combined with premiums reported for zip codes outside of Colorado. These were excluded from the analysis.

[1]: Reconciliation has been performed using NAIC's 2021 market share report data, pulled through S&P Market Intelligence.

DEEP DIVE INTO DATA COLLECTED

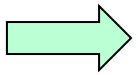
Unit data is at the center of our insurance availability analysis.

Report Breakdown			
Year	**Month**	**Zip Code**	**Policy Type**
2022	10	80202	Homeowners

Premium Data by Calendar Month ($)		
Direct Premium Written During the Calendar Month	**Direct Premium Earned During the Calendar Month**	**Direct Premium Inforce As of Month-End**

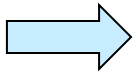
Unit Data (#)		
Direct Units Written During the Calendar Month	**Direct Units Earned During the Calendar Month**	**Direct Units Inforce As of Month-End**

Loss Data by Accident Month ($) - Reported as of 10/31/2022		
Direct Losses Incurred on Claims with Dates of Loss in Accident Month	**Direct DCC Incurred on Claims with Dates of Loss in Accident Month**	**Direct Reported Claim Counts with Dates of Loss in Accident Month**



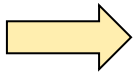
Breakdown

- **Monthly Data**: Since the availability situation was anticipated to be evolving quickly at the onset of this analysis (Fall 2022).
- **Zip Code**: Allows us to identify availability/affordability problems at a granular level & compare with high-risk areas from the wildfire model.
- **Policy Type**: Allows us to split "Homeowners Multi-Peril" policies between the 3 core types: Homeowners (e.g., HO-3), Renters (e.g., HO-4) & Condos (e.g., HO-6). The focus of this study is specifically Homeowners policies (HO-3).



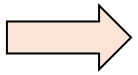
Premiums

- **NAIC Reconciliation**: Annual Totals are expected to be equal to CO Totals for "Homeowners Multi-Peril" in the state.
- **Written/Inforce**: Allows us to track evolution of average premiums charged on a timely basis.
- **Earned**: Collected in anticipation of a profitability analysis.



Units

- **Exposure Counts**: Tracks the amount of policies underlying premium & loss figures (insured buildings for HO-3, insured building units for HO-4 & HO-6).
- **Core Availability Metric**: Allows us to track whether less buildings are finding insurance in the state, as well as how the average price they are paying is evolving.



Losses

- **Accident Months**: Collected this way in order to track catastrophic occurrences more accurately.
- **Catastrophic Nature**: Since the Colorado situation is anticipated to be tied to wildfire risk, and catastrophic exposures do not lend themselves nicely to analysis of historical losses over a short period, the analysis of this data has not been prioritized for this study.

HANDLING OF GEOGRAPHICAL DATA

Data Manipulation

- We used the “zipcodes” open-source Python package to perform our manipulations of the ZIP code-level data collected from carriers.
- Some of the useful information we relied on includes the type of code (“Standard” or “PO Box”), their central location (lat./long.), as well as associated their cities and counties.
- Link: https://pypi.org/project/zipcodes/

Visual Representation

- We used ArcGIS’ dataset of US ZIP codes areas (as-of Dec 2021) – owned by ESRI – to present our figures onto maps (using the geographical coordinates relevant to each ZIP code).
- The map we relied on is “Open Street” map, which is free and publicly available.
- This dataset also contained some demographic information such as the population density by zip code (as-of June 2021), which we used as well.
- Link: https://www.arcgis.com/home/item.html?id=8d2012a2016e484dafaac0451f9aea24

From ZIP code data to County data

- Using the “zipcodes” open-source package, we retrieved the most county associated to each unique zip code.
- We then combined this to the ArcGIS dataset to compute the geographical surface of each county by combining the surface of each underlying ZIP code.
- This representation is **imperfect**, as in practice any given ZIP code can spread across more than one county. Nonetheless, we believe this simplified representation may prove useful to the reader.

07

DISCLAIMERS AND LIMITATIONS

DISCLAIMERS REGARDING DATA LIMITATIONS

- **Missing Carriers**: Oliver Wyman had initially surveyed 97.3% of Colorado's "Homeowners Multi-Peril" market shares to produce this study. Some of the surveyed carriers – either because they did not respond or because material data integrity concerns were identified – had to be excluded from the data analysis. This brought us down to 95.3% market shares available for our analysis, which we feel is sufficient to depict an adequate portrait of the industry in this state. However, we recognize that in the event where significant movement would be happening within the remaining 4.7% (e.g., significant growth in 2022), this could have an impact on our findings.

- **Discrepancies with NAIC Statements**: All carriers were instructed to report premium volumes that reconcile with their NAIC annual statements for "Homeowners Multi-Peril" in Colorado. We performed a reconciliation, and where the discrepancies were completely unrealistic (in multiples of the NAIC-reported volume), we contacted the carriers for revision. Smaller discrepancies – which could range from -22% to +22% depending on the carriers & years – have been observed as well. Depending on the nature & magnitude of volume missing or in excess, findings could be materially impacted by this issue.

- **Reliance on Guy Carpenter's wildfire score**: In order to assess the wildfire exposure in the state, we have relied on the wildfire score developed by our sister company Guy Carpenter. We recognize that different vendors may come to different assessments of the wildfire risk in the state. Also, due to the granularity of the surveyed data, we represented wildfire exposure at the zip code level. This is an important simplification, as in practice the wildfire risk may vary greatly within a zip code. Insurers may even rely on geo-coding to properly assess the risk of each policy.

- **Data Validations**: While we have made several reasonability checks of the data received and created a process that allows for reconciliation of some of the figures with NAIC statements, this analysis still largely relies on the assumption that insurers answered the survey accurately and in good faith.

- **Data Confidentiality:** In order to produce this study, Oliver Wyman surveyed granular data from insurance carriers, and also collected detailed information regarding the companies' pricing & underwriting methodologies. As our goal was to depict industrywide trends, all the exhibits & findings presented throughout this report are always aggregated in some way. We did not highlight information from individual carriers anywhere in this report.

QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS: OLIVER WYMAN

Oliver Wyman Actuarial Consulting, Inc. (Oliver Wyman) prepared this report for the State of Colorado's Division of Insurance (the Agency), to support the Agency in fulfilling the requirements of SB22-206, C.R.S. § 10-1-143, which requires the commissioner of the Agency to conduct a study and prepare a report concerning methods to address the stability, availability, and affordability of homeowner's insurance for Coloradans with a focus on stabilizing the current market.

This report includes important considerations, assumptions, and limitations and, as a result, is intended to be read and used only as a whole, and may not be separated into, or distributed in, parts.

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The opinions expressed herein are valid only for the purpose stated herein and as of the date hereof.

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QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS: GUY CARPENTER

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There are many limitations on actuarial or modeling analyses, including uncertainty in the estimates and reliance on data. We will provide additional information regarding these limitations upon request.

As with any analysis, the results presented herein are subject to significant variability. While these estimates represent our best professional judgment, it is probable that the actual results will differ from those projected. The degree of such variability could be substantial and could be in either direction from our estimates.

A business of Marsh McLennan