STATE OF MONTANA
OFFICE OF THE MONTANA STATE AUDITOR
COMMISSIONER OF SECURITIES AND INSURANCE

STANDARD SUPPORT FOR PROPERTY & CASUALTY RATE/RULE FILINGS
Last updated: 12/15/2020

Mont. Code Ann. § 33-16-203 requires that rates be filed together with sufficient supporting data to substantiate such filing. The purpose of this document is to communicate what support the DOI requests be initially submitted in a property and casualty rate/rule filing to help expedite the review. **Please address all of the items from below whether or not the rate filing contains a statistical/predictive model.**

1.) If the Company is proposing a rate increase/decrease, provide the actuarial rate indication.
2.) If the Company is introducing a new product, explain how the proposed rates were derived.
3.) For each rating factor, state what methodology (e.g., GLM, LER analysis, competition, etc.) was used to derive the indicated factor values.
4.) Provide an Excel file containing the current (if applicable), indicated, and selected relativities for each rating variable.
5.) For each rating variable, provide a plot containing the current (if applicable), indicated (with error bars if applicable), and selected relativities. Note: see Appendix for an example plot.
6.) For all territorial and/or geo-based rating variables, provide a statewide choropleth of the relativities.
7.) Provide the distribution of insureds that fall within each of the following percent rate change ranges as a result of this revision for BOTH with and without rate capping: -50% or less, -40% to -49.9%, -30% to -39.9%, -20% to -29.9%, -15% to -19.9%, -10% to -14.9%, -5% to -9.9%, 0 to -4.9%, 0 to +4.9%, +5.0% to +9.9%, +10% to +14.9%, +15% to +19.9%, +20% to +29.9%, +30% to +39.9%, +40% to +49.9%, +50% to +59.9%, +60% to +69.9%, +70% to +79.9%, +80% to +89.9%, +90% to +99.9%, +100% or more. If utilizing rate capping, an end date needs to be incorporated into the rules.
8.) Describe the scope of the data utilized – include the size of the dataset, experience period, how Montana data is utilized, and provide a response to all items in § 4.1 of ASOP No. 23.
9.) For third-party data, provide a list of the variables being utilized in rating and their respective source/vendor. If the data or information about the data is publicly available, provide the URL.
10.) If output from a catastrophe or external model is used, provide the following: (i) disclose the model's vendor and provide any non-confidential information available about the model and variables used; (ii) have the qualified actuary address §§ 4.1 and 4.3 of ASOP No. 38 and/or 56 and provide their signature and date; (iii) if the model has been filed with the DOI, provide the SERFF tracking number.
11.) Detail the extent of missing data in each rating variable and explain how missing data are handled in the dataset (e.g., excluded, imputed, etc.). If unknowns are contemplated in rating, explain how they are treated (e.g., neutral factor) and what actions are taken to obtain the unknown rating characteristic.
12.) Explain how the Company's use of auto accidents and auto violations in modeling and rating is compliant with the following statutes: (i) Mont. Code Ann. § 33-18-210 (11)(b) for commercial auto; (ii) Mont. Code Ann. § 33-18-210(11)(a) for private passenger auto.
13.) Explain how the Company's use of not-at-fault accidents in the modeling and rating of private passenger auto insurance is compliant with Mont. Code Ann. § 33-18-210(12).
14.) Explain how the Company's use of prior auto insurance in the modeling and rating of private passenger auto insurance is compliant with Mont. Admin. R. 6.6.3304.
15.) Explain how the Company's use of sex and marital status in modeling and rating is compliant with Mont. Admin. R. 6.6.2102.
16.) Explain how the proposed method(s) comply with the advisory memorandum on price optimization provided at: http://csimt.gov/wp-content/uploads/PriceOptMemo_091215.pdf.
17.) Provide a data dictionary containing the following: (i) variable name or abbreviation; (ii) detailed definition/description; (iii) data type (i.e., nominal, ordinal, discrete, or continuous); (iv) any modifications applied to data (e.g., transformation, capping, trending, scaling, etc.).
18.) State what type of models were fit (e.g., GLM, regression tree, etc.) and what the response variable is.
19.) Disclose all statistical/machine learning methods that were used (either directly or indirectly) in both model and/or variable development.
20.) Provide a table detailing which variables are used in each model and how they are treated within the model (e.g., modeled, control, offset).
21.) State any constraints imposed upon the model coefficients.
22.) Describe what steps were taken to identify high pairwise correlations amongst predictors and multicollinearity within the model. Provide the following: (i) describe any identified issues and explain how they were resolved; (ii) state what the largest pairwise correlation is in the data set; (iii) correlation matrix.

23.) If variable selection was performed, provide the following: (i) describe how it was performed and explain what statistics/metrics/methods were used; (ii) state how many candidate variables were considered for inclusion in the model(s) and how many were ultimately excluded from the final model(s).

24.) Provide the coefficient estimate and standard error for each variable.

25.) Explain how selections are made from the model output – include the use of competitive data and any credibility procedures.

26.) State how model stability was assessed (e.g., bootstrapping) and provide the results.

27.) Detail the methods used to assess the predictive performance of the model on _unseen_ data and provide a summary of the results.

28.) Provide lift charts (double lift when appropriate) for models fit to both training and validation data. Plots should include both the predicted and actual response values for each quantile.
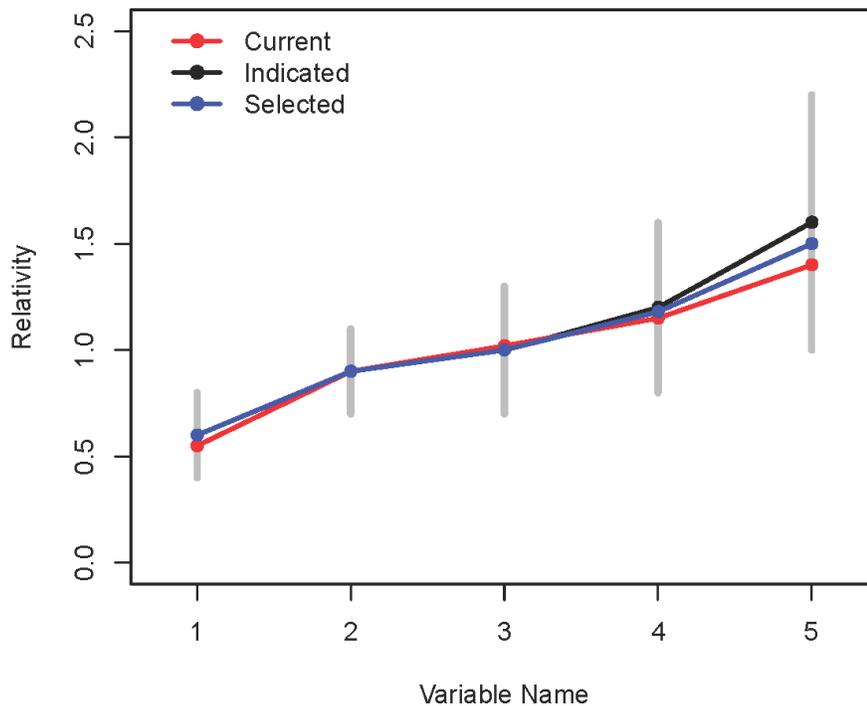
APPENDIX:

Figure 1: Example plot containing current (if applicable), indicated, and selected relativities.