January 20, 2021

Floyd Yager, Chair
Florida Commission on Hurricane Loss Projection Methodology
c/o Donna Sirmons
Florida State Board of Administration
1801 Hermitage Boulevard, Suite 100
Tallahassee, Florida 32308

Re: AIR Hurricane Model for the United States Version 17.0.1 as Implemented in Touchstone 8.2.5

Dear Mr. Yager,

AIR would like to submit the AIR Hurricane Model for the United States Version 17.0.1 as Implemented in Touchstone 8.2.5 under the 2019 Report of Activities, Sections VI.H and VI.I as an Interim Software and Geographical Update.

Updates to Model Components of Touchstone

There were no changes made to the submitted AIR U.S. Hurricane Model Version 17.0.1.

AIR has provided an alternative version of its U.S. Hurricane Model to clients in Touchstone 8.2.5 which includes hurricane induced precipitation flooding. The alternative Hurricane Model, Version 18.0.3, is not being submitted to the Commission at this time. For Florida analyses, clients will still use the originally submitted AIR Hurricane Model Version 17.0.1, which is implemented in Touchstone 8.2.5.

Updates to Software Components and the Other Models of Touchstone

With this software update, AIR improved Touchstone's functionality. These changes are unrelated to and do not impact the AIR U.S. Hurricane Model, Florida loss costs, AALs or PMLs:

- As is customary, AIR has made updates to the Touchstone software to improve usability and functionality for clients and their workflows. Updated functionality includes the introduction of premium international geocoding, flexibility in deductible policy logic, handling of policy term features available in specialized commercial lines of business, upgraded database maintenance procedures, and other new software analytics features.
- AIR has made enhancements to other tools/offerings, not including the AIR U.S. Hurricane Model, that can be used to interface with AIR's Touchstone platform (e.g. APIs). These updates have no impact on the AIR U.S. Hurricane Model.

Interim Update to Geographical Data

Update Description

AIR has also incorporated the 2019 updates to the US Census Topological Integrated Geographic Encoding and Referencing (TIGER)/Line data in the AIRAddressServer database, one of the geographical databases. This database is the primary source of geocoding assignments when detailed street address information is present in the company's exposure data. Therefore, this has no impact on the ZIP Code centroids modeled for FL or resulting loss costs or PMLs from a ZIP-aggregated exposure

set containing no street information or an exposure set containing the exact latitude/longitude coordinates for each risk. However, it may have an impact on loss costs or PMLs from an exposure set with detailed street information. This update improves the overall street match/geocoding in this release of Touchstone. The varying impacts on loss costs and PMLs would depend on the type of exposure modeled.

Impact on Loss Costs

1. Exposure with ZIP Code information and no address information (see Location 1 in Table 1) – this geographical data update has no impact on loss costs or the PMLs, as shown in the A-Forms required by the Commission. In the case of ZIP aggregated exposure data, geocoding uses only the ZIPAll database, which has not been updated in Version 8.2.5.

2. Exposure imported with geocodes (latitude/longitude) supplied by user (see Location 2 in Table 1) – this geographical data update has no impact on loss costs or the PMLs. When the user supplies a latitude and longitude, geocoding is not required.

3. Exposure imported with detailed street address information (see Location 3 in Table 1) – this geographical update may impact loss costs if the street information provided by the US Census Bureau has been enhanced. For exposures imported with detailed street address information Touchstone uses its AIRAddressServer database to retrieve geocodes based on the address information provided by the user, including street names, street numbers, city information as well as ZIP Codes.

Below is an example to demonstrate the impact on losses for the three exposure types mentioned above. In Table 1 below, we show a loss comparison for three risks in Florida; Location 1 corresponds to case 1 listed above, Location 2 corresponds to case 2, and Location 3 corresponds to case 3 above. Losses for Location 1 and 2 remain the same between Version 6.1 and 8.2.5 as the geocoding for these two locations have not been affected by the US Census Bureau TIGER data update. There is, however, a slight loss change for Location 3 as it relies on the AIRAddressServer, which reflects the TIGER data update. The updated TIGER data results in a small difference in the assigned geocode between Touchstone Version 6.1 and 8.2.5 due to the US Census Bureau TIGER data update.

Location	City	Address	Postal Code	Subarea Name	Area Code	Latitude	Longitude	Lat/Lon Assigned by TS? (Y/N)	TS 6.1 GrossLoss	TS 8.2.5 GrossLoss	Percent Diff
1			32065	Santa Rosa	FL	30.39131	-87.050582	Y	3,472.42	3,472.42	0.00%
2				Santa Rosa	FL	30.38487	-87.05233	N	3,811.65	3,811.65	0.00%
3	GULF BREEZE	4121 SOUNDPOINTE DR	32563	Santa Rosa	FL	30.38594	-87.053337	Y	3,811.65	3,808.13	-0.09%

Table 1.

Geographical Update Data Source

As mentioned, the updated AIRAddressServer in Touchstone Version 8.2.5 contains the new information from the TIGER/Line data released by the US Census Bureau in 2019. The TIGER shapefiles are spatial extracts from the TIGER database, containing features such as boundaries, roads, address information and other geographic information. The update generally includes data on new streets, enhanced street directional, street types as well as latitude/longitudes corresponding to the start and endpoints of street segments collected by the US Census Bureau across various jurisdictions. In general, the overall street match/geocoding improves by 1 to 2% with each annual release. The resulting changes in the modeled loss costs and PMLs at the portfolio level are minimal and are generally less than 0.05% based on a test client portfolio comprised of roughly 200,000 locations across Florida.

Required Deliverables

In accordance with the 2019 Report of Activities, Section VI.H and Section VI.I, we have prepared the following forms with results from the currently acceptable version, 6.1.0 and the updated version, 8.2.5, as well as a percentage change that demonstrates no change for the Commission's review:

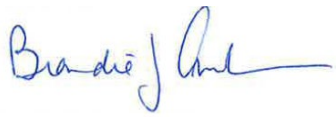
- Form A-1 (Zero Deductible Personal Residential Loss Costs by ZIP Code)
- Form A-4B (Output Ranges)
- Form A-8B (Probable Maximum Loss for Florida)
- Form S-5 (Average Annual Zero Deductible Statewide Loss Costs – Historical versus Modeled)
- Form V-2 (Hurricane Mitigation Measures and Secondary Characteristics, Range of Changes in Damage)

Additionally, in accordance with the 2019 Report of Activities, Section VI.I, we have prepared maps with all ZIP Code centroids as well as a sorted list of all ZIP Codes and corresponding primary counties from the currently acceptable version, 6.1.0, and the updated version, 8.2.5, for the Commission's review:

- Maps of the old and new ZIP Code centroids – see maps named, AIR17_ZIPCentroid_Map_FL_TS6.1.0, AIR17_ZIPCentroid_Map_FL_TS8.2.5, and AIR17_ZIPCentoid_Map_FL_TS6.1.0_vs_TS8.2.5
- A list of all ZIP Code centroid movements of one mile or more, the top ten movements and the new and retired ZIP Codes – this geographical data update does not cause movements in modeled ZIP Code centroids. A list of all ZIP Codes and their primary counties are included in the files named, AIR17_ZIPCode_List_TS6.1.0_vs_TS8.2.5_Final
- A list of the impacted ZIP Code related databases – this geographical data update does not impact the AIR ZIPAll database

AIR would like to submit and request the review of Touchstone 8.2.5 under the 2019 Report of Activities, Section VI.H and Section VI.I., for consideration of an interim software and geographical update. We ask that the Commission confirm that the AIR Hurricane Model for the United States v17.0.1 as Implemented in Touchstone 8.2.5 is considered acceptable under the 2019 standards.

Best regards,



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