

The Broader Solution for Commercial Underwriting from AIR and Verisk Analytics

Managing Catastrophe Risk in Commercial Underwriting Webinar Series
Peter Bingenheimer, Vice President



Webinar Series Agenda

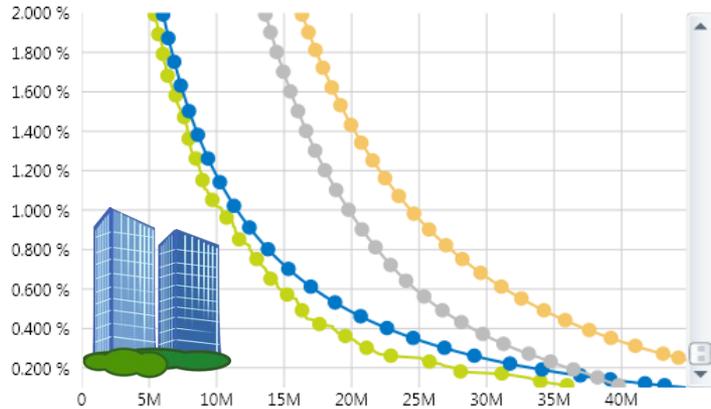


June 2 Own the Risk in Commercial Underwriting
in Touchstone

June 23 Using Touchstone for Accumulation
Management and Advanced Geospatial Analysis

July 14 The Broader Solution Set for Commercial
Underwriting from AIR and Verisk Analytics

AIR's Models and Software Are Widely Accepted for Commercial and E&S Underwriting

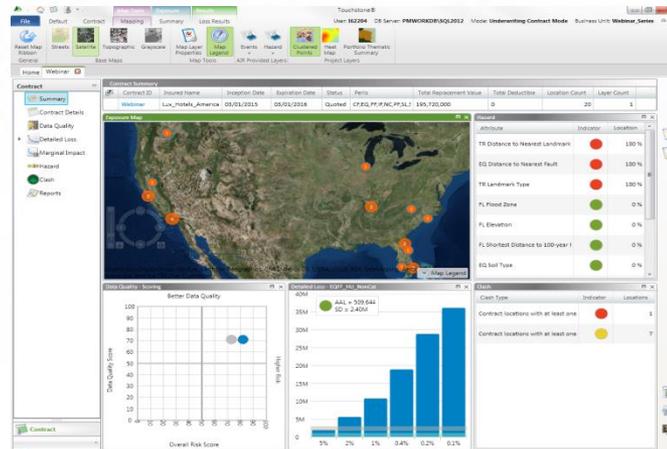


Enhanced Modeling Capabilities for Commercial Risks



Verisk Analytics®

Access to Verisk Analytics Assets



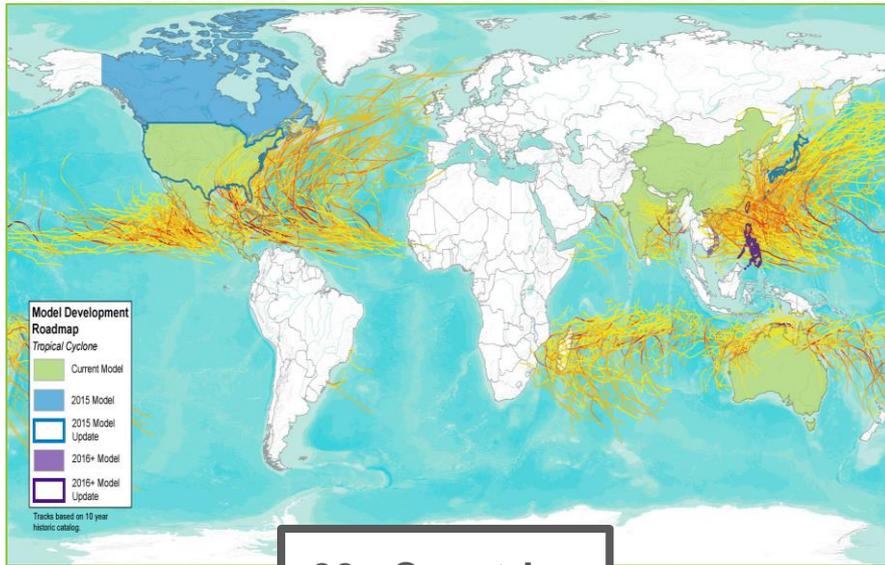
Touchstone®

AIR's Comprehensive Risk Management Platform

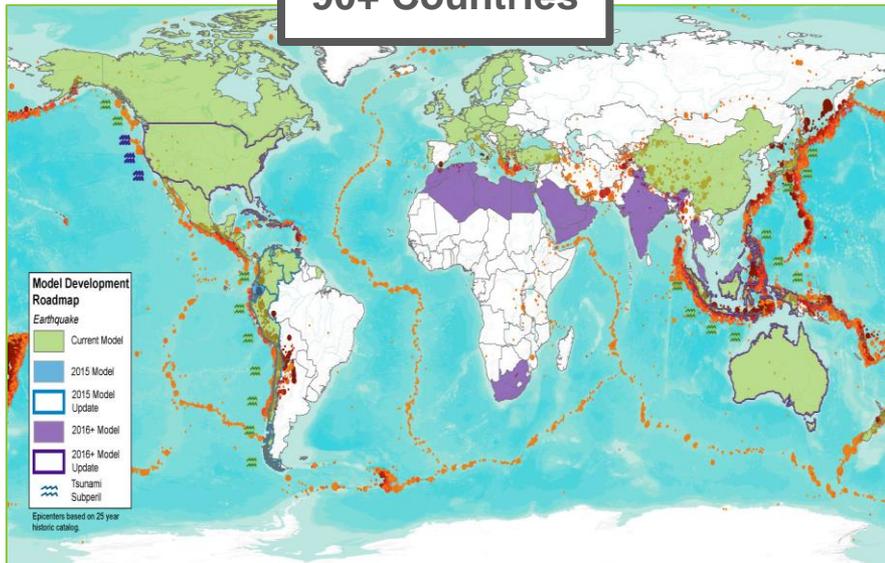
Suitability of AIR's Models for Modeling Commercial Risks



AIR Delivers the Most Robust Models for Risks of All Types Across the Globe

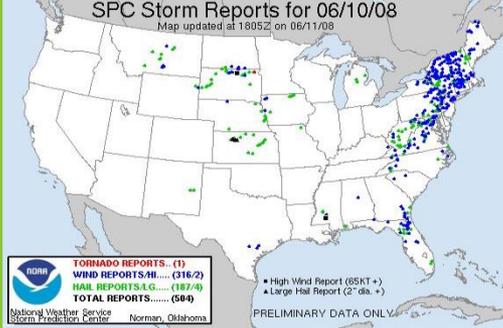


90+ Countries





2007
Terrorism
 • Commercial vulnerability

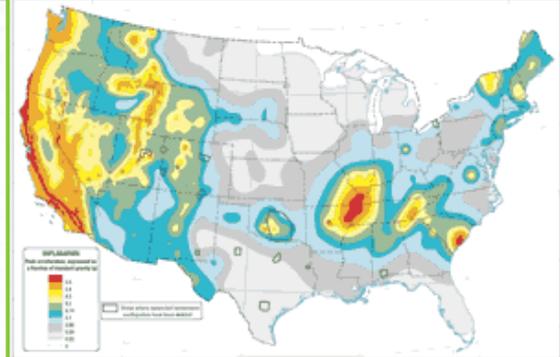


2009
U.S. Earthquake
 • Latest hazard maps
 • Vulnerability enhancements
 • Intro of Industrial Facilities model

2006 & 2007
U.S. Hurricane
 • Storm surge
 • Commercial vulnerability
 • Business interruption



2008
U.S. Hurricane
 • GOM hurricane initial model release
Severe Thunderstorm
 • Commercial vulnerability



2011
Terrorism
 • Commercial vulnerability



2014
Severe Thunderstorm
 • Vulnerability enhancements
U.S. Flood Model
 • Initial model release



2010
U.S. Hurricane
 • Commercial vulnerability
 • Intro of industrial facilities model



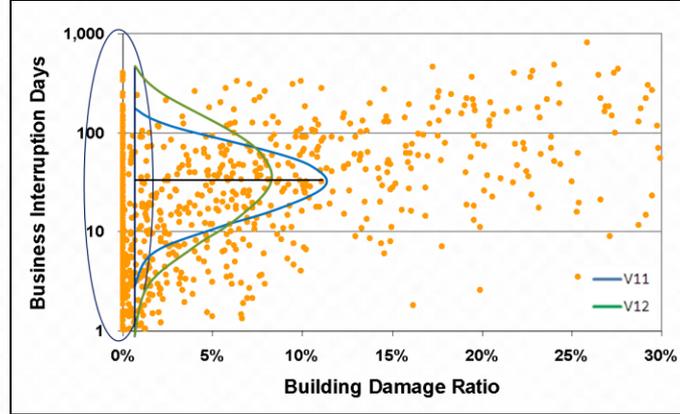
2012
U.S. Hurricane
 • Intro of builder's risk
U.S. Earthquake
 • Intro of builder's risk



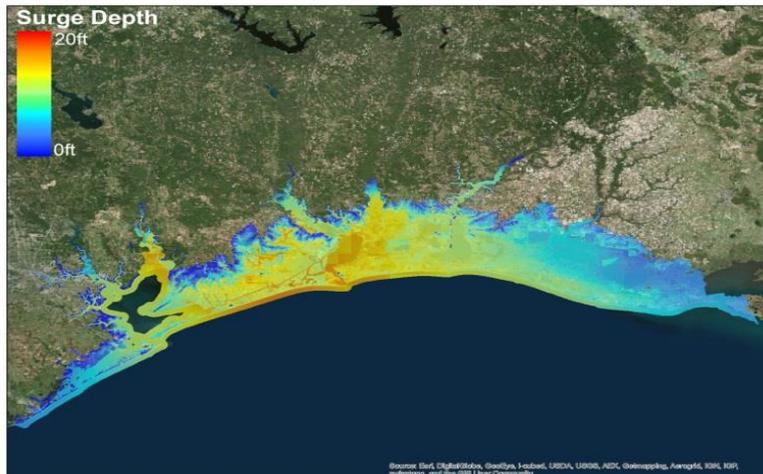
2015
U.S. Hurricane
 • Storm surge update

Recent Enhancements to Commercial Lines Modeling for U.S. Hurricane Are Informed by Extensive Claims Data

Significant enhancements to commercial vulnerability in 2010

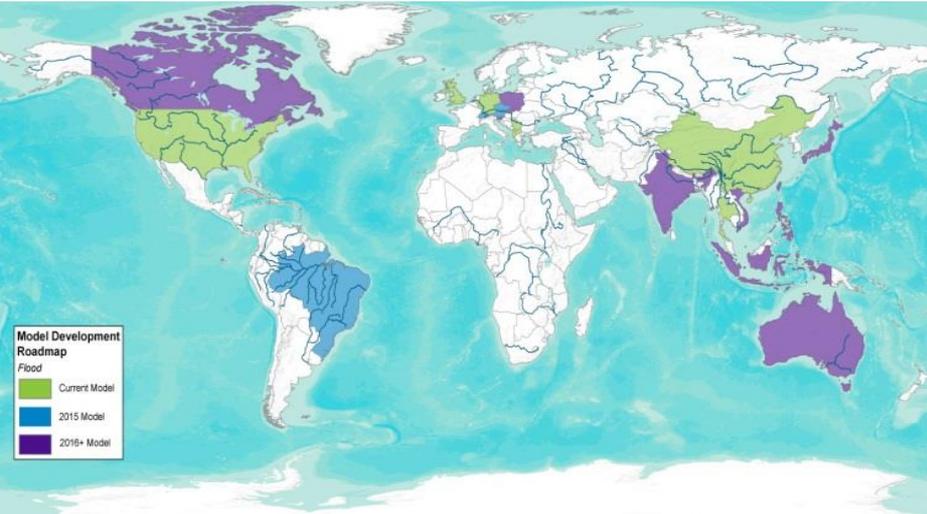


Significant enhancements to storm surge module in 2015



Our Growing Support for Commercial Lines Extends Far Outside North America

Focus on water perils globally



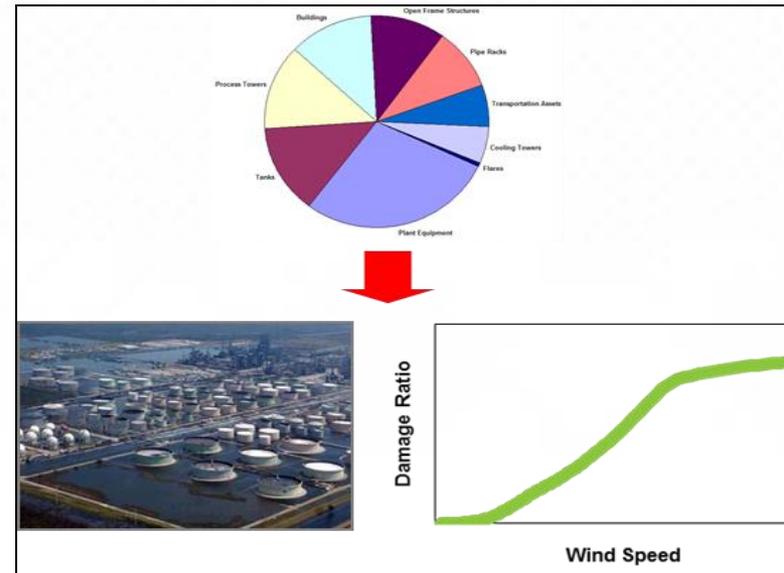
Expanded support for specialized risks



AIR's Catastrophe Risk Engineering Practice Extends Our Capabilities in Commercial Modeling

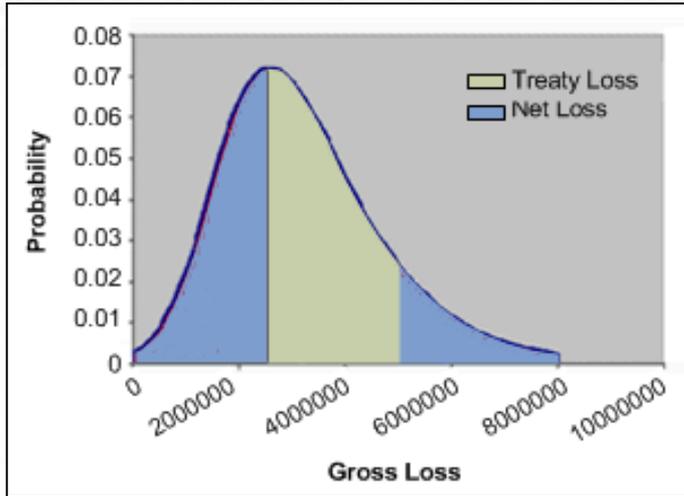
Catastrophe Risk Engineering consulting practice offers supplemental services that can help you reduce uncertainty for individual risks and get the best estimate of risk

Expertise developed through these services are being leveraged to enhance AIR's off-the-shelf models

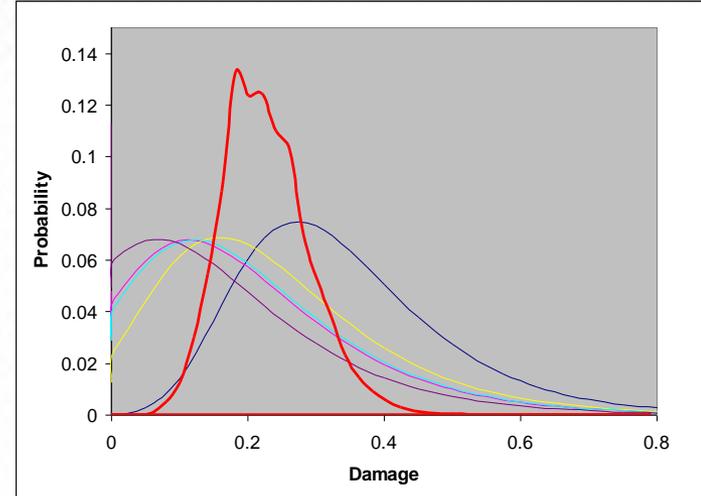


AIR's Financial Module Offers Superior Handling of Uncertainty and Supports a Broad Range of Terms

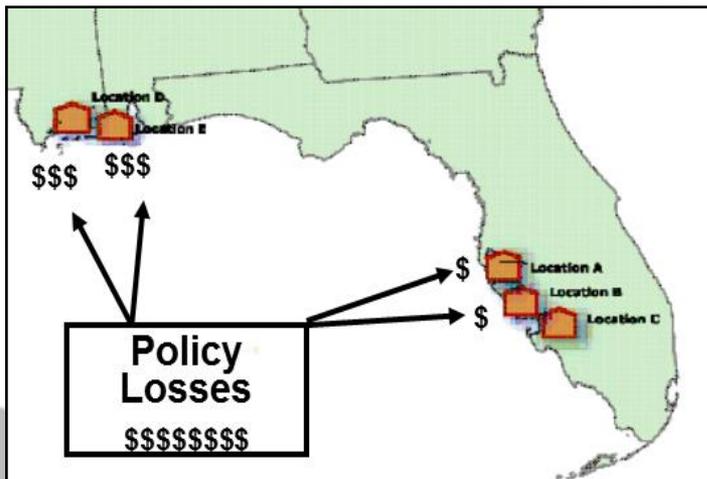
Probabilistic application of terms



Numerical convolution



Back allocation



Breadth of supported terms

Section 1
 USD 75,000,000 per occurrence and in the annual aggregate in respect of Flood and Earth Movement separately

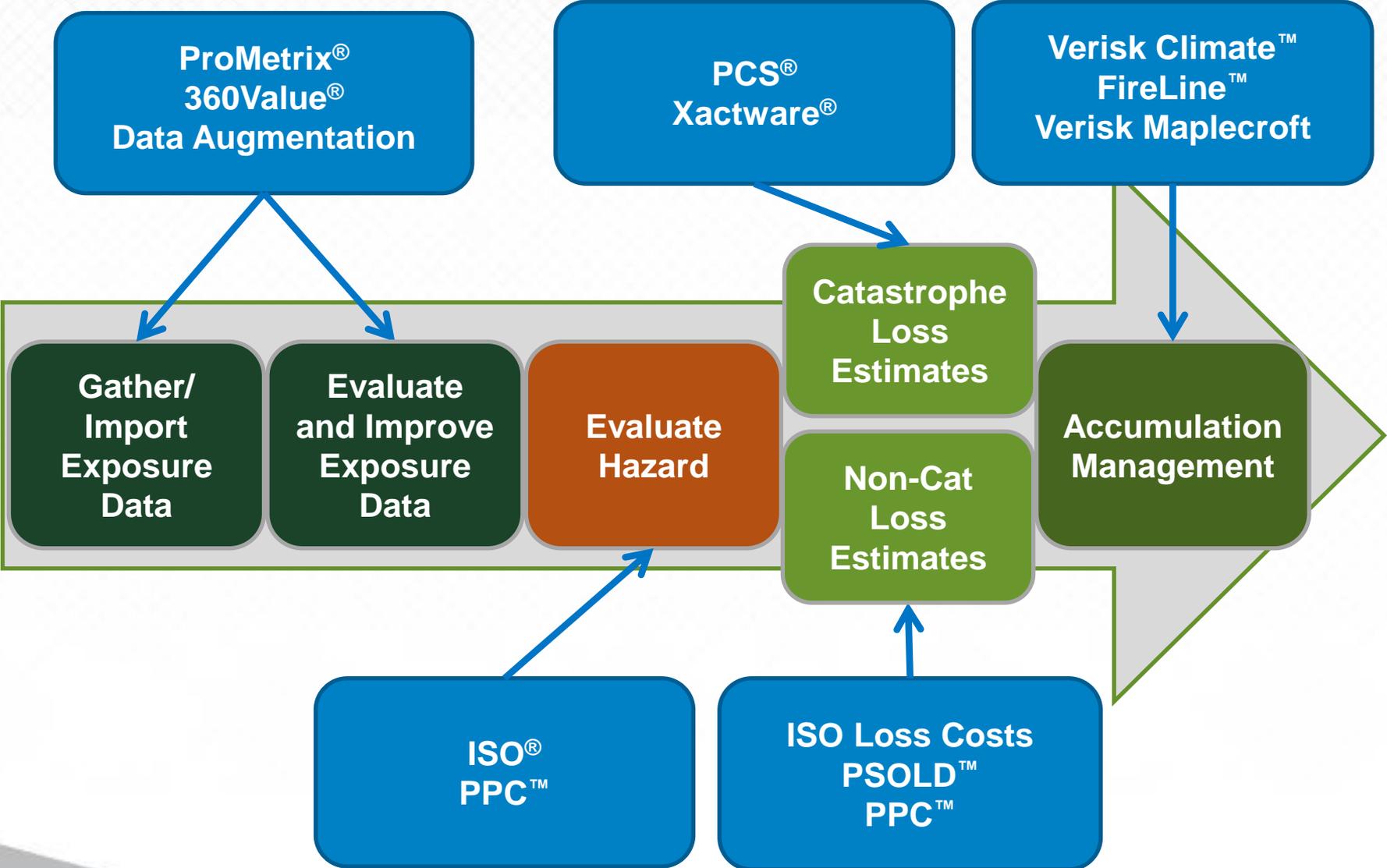
Excess of
 USD 25,000,000 per occurrence and in the annual aggregate in respect of Flood and Earth Movement separately

Excess of program deductibles as defined in the wording
 Subject to program sub-limits as defined in the wording

Benefits and Additional Capabilities Enabled by Verisk



Verisk Assets Enhance Capabilities Across the Entire Touchstone Workflow



Evaluating Exposure Data Is a Critical in Risk Assessment



Occupancy: Unknown

Construction: ISO Fire Class 4

Year Built: Unknown

Number of Stories: Unknown



Occupancy: Temporary Lodging

Construction: Reinforced Concrete

Year Built: 1991

Number of Stories: 3

Improve Your Data with Site-Verified Information to Build Confidence in Your Modeling Results



**BUILDING UNDERWRITING REPORT
DATA SUMMARY**

BUILDING INFORMATION

BAIN & COMPANY, (11S) 131 DARTMOUTH ST BOSTON, MASSACHUSETTS 02116 County : SUFFOLK FPA : BOSTON	ISO Risk ID : 20 MA99 013152 On-Site Survey On : 09/2008 Schedule Applied Date : 11/22/2014 Year Built: 2001 Approx
--	--

RELATIVE HAZARD GRADING

Occupancy: Office and banks	Building Fire Protection: Sprinklered
---------------------------------------	---

This Building	1.2	
State Average	5.3	
ProMetrix Database Average	5.0	

0 1 2 3 4 5 6 7 8 9 10

BUILDING CONSTRUCTION

ISO Fire Class : 5 - Modified Fire Resistive

OCCUPANCY SUMMARY

Number of Occupants : 6

	Number	% of Area	Hazards
Habitational			
Mercantile			
Restaurants	2	.7	YES
Vacancies	1	1.9	NO
Offices	1	63.7	NO
Non-Manufacturing	2	33.1	NO
Manufacturing			
Building Services		.6	

Overall Combustibility : 2(MEDIUM-LOW)

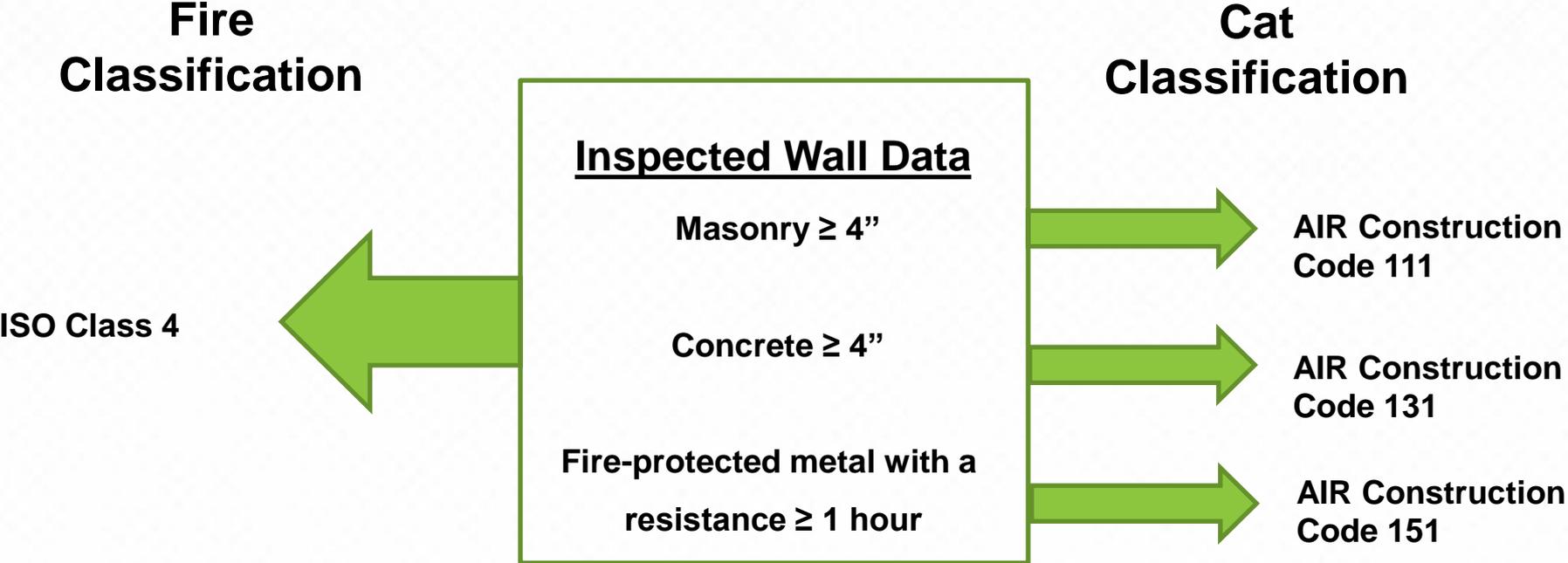
BUILDING FIRE PROTECTION DETAILS

SPRINKLER SYSTEM INSTALLED
 - RECEIVING CREDIT
 SPRINKLER GRADING = 65
 EXTINGUISHER CREDIT APPLIES

PUBLIC PROTECTION CLASSIFICATION

Public Protection Class : 01	Fire Protection Area : BOSTON
------------------------------	-------------------------------

AIR Adds Insight to ProMetrix Data Available in Touchstone's Data Quality Analytics Module



Are You Modeling Adequate Building Replacement Values?

Commercial

[Click for help on this form](#)

Valuation Reports

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[English & French](#)

[Download PDF](#)

Attachments

Risk Reports

Edit Policy

Calculate ACV

CAT Risk Assessment

RMI XMLs

Debug Info

Regenerate Report

RESULTS FOR AB6ID6U.1

OWNER INFORMATION

Name:	AIR	Date Entered:	11/13/2014
Street:	131 DARTMOUTH ST	Date Calculated:	03/31/2015
City, State ZIP:	BOSTON, MA 02116	Created By:	Dennis Costello (dcostello)
Country:	USA	Owner:	Dennis Costello (dcostello)
Seismic Zone:	2A		

PROPERTY INFORMATION

Name:	AIR	Bldg #:	
Street:	131 DARTMOUTH ST		
City, State ZIP:	BOSTON, MA 02116		
Country:	USA		

ESTIMATED REPLACEMENT COST

Calculated Value: **\$95,733,326.18**

[Pricing Research for 02116](#)

[Provide feedback on this value](#)

The replacement cost amount(s) above represents the estimated cost for a contractor/repair company to rebuild the structure(s) described herein in the referenced geographic market in accordance with current building codes following a total loss. This information is provided on the condition and understanding that it represents only an estimate and that the provider is not responsible for good faith errors. The replacement cost amount(s) includes pricing for labor, materials and contractor's overhead and profit; it does not include costs for excavation or land value.

(Replacement cost includes all applicable permits, fees, overhead, profit, and sales tax)

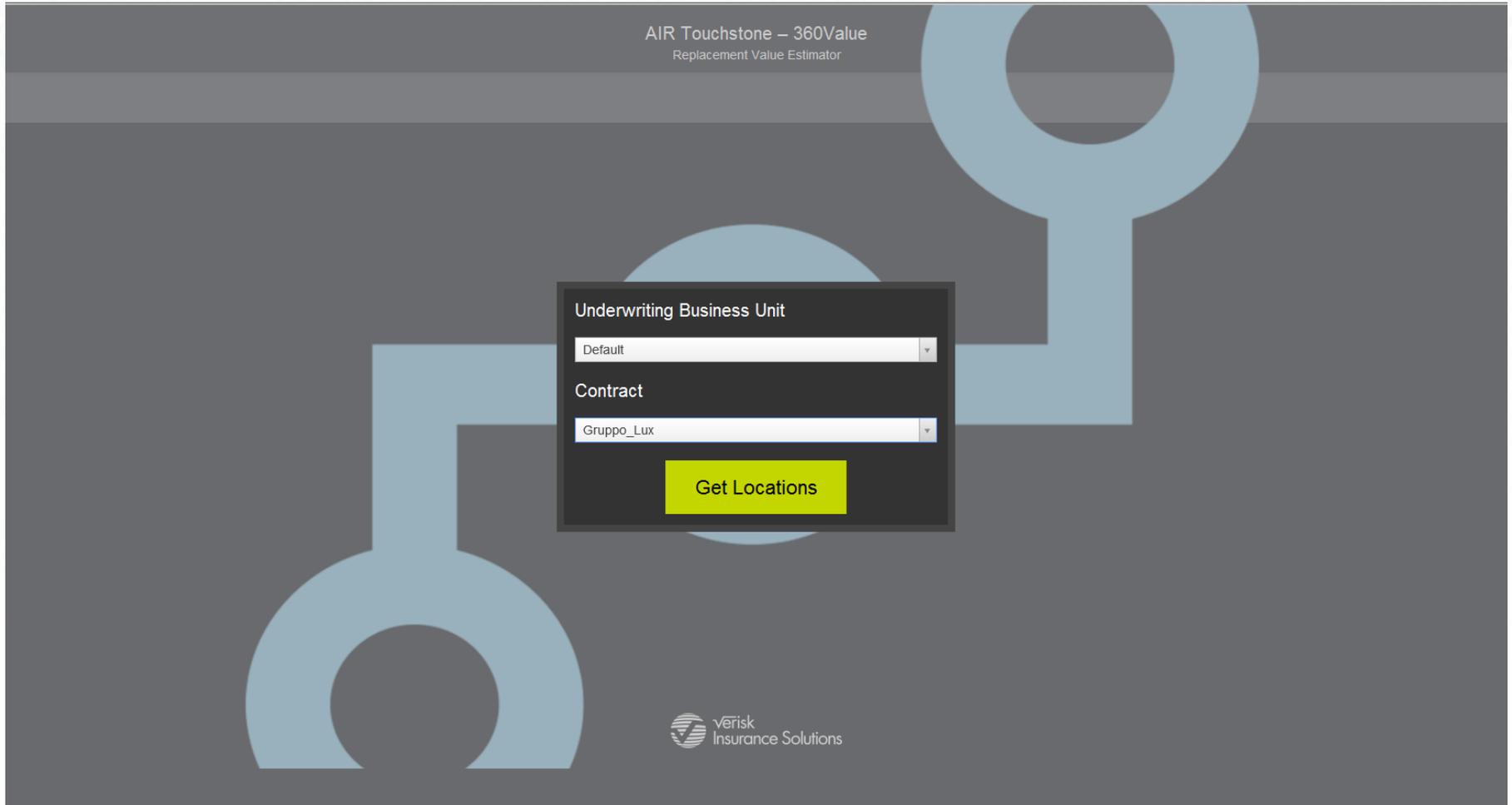
[Adjust Value](#)

[Edit](#)

[Finish](#)

[Copy Valuation](#)

Touchstone Can Be Seamlessly Updated With 360Value Replacement Values



Touchstone Can Be Seamlessly Updated With 360Value Replacement Values

AIR Touchstone – 360Value

Replacement Value Estimator

Processing 20/20

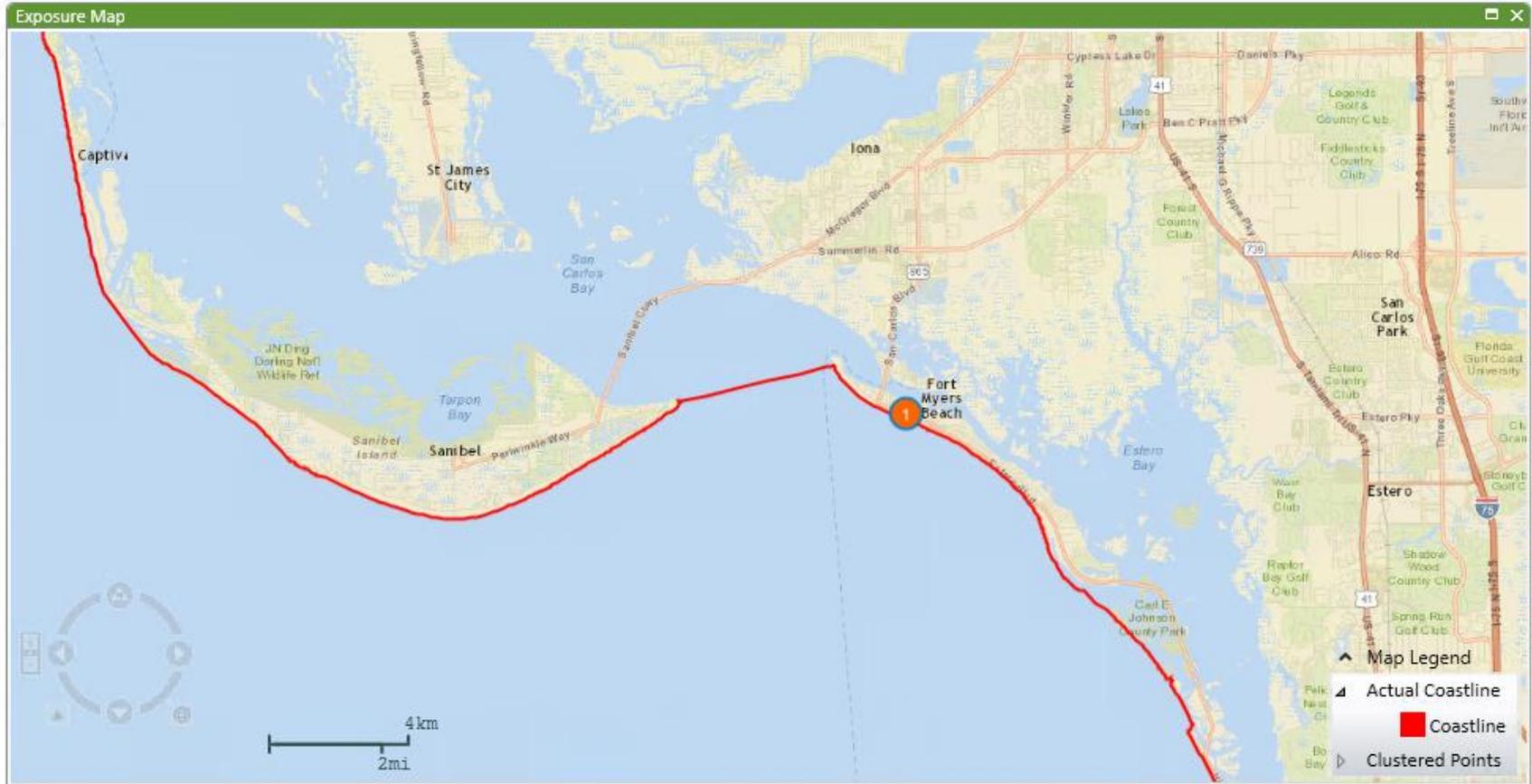
 Home

Address	Construction	Occupancy	Year Built	Stories	Area (SqFt)	Building Rep. Val.	360 Building Rep. Val.	Replace? <input type="checkbox"/>
42200 ALBRAE ST CA,FREMONT 94538	Wood frame	Temporary lodging	2000	4	75924	\$8,893,811	\$8,038,552.45 \$106	<input type="checkbox"/>
1020 S FIGUEROA ST CA,LOS ANGELES 90015	Reinforced concrete	Temporary lodging	1964	10	143954	\$20,151,200	\$22,608,182.1 \$157	<input checked="" type="checkbox"/>
433 W PICO BLVD CA,LOS ANGELES 90015	Masonry	Temporary lodging	1914	4	73625	\$9,307,326	\$7,206,524.99 \$98	<input type="checkbox"/>
1100 EL CAMINO REAL CA,MILLBRAE 94030	Reinforced concrete	Temporary lodging	1950	3	23616	\$4,843,135	\$3,993,615.06 \$169	<input type="checkbox"/>
2066 BIRD ST CA,OROVILLE 95965	Reinforced masonry	Temporary lodging	1929	0	56211	\$6,426,259	\$5,971,340.82 \$106	<input type="checkbox"/>
2550 ERRINGER RD CA,SIMI VALLEY 93065	Wood frame	Temporary lodging	1985	3	58000	\$6,118,157	\$5,335,610.53 \$92	<input type="checkbox"/>
8822 CYNTHIA ST CA,WEST HOLLYWOOD 90069	Wood frame	Temporary lodging	1979	4	68715	\$5,901,123	\$6,373,672.41 \$93	<input checked="" type="checkbox"/>

Showing 1 to 20 of 20 entries

[Update Locations](#)

Verisk Offers a Variety of Hazard Analytics



ISO Distance to Coast

Future additions of PPC, FireLine

Touchstone Provides a Full View of Risk



Cat Risk



Tropical Cyclone
(Hurricane, Typhoon)



Severe Thunderstorm
(Tornado, Hail,
Straight-Line Wind)



Extratropical Cyclone
(Winter Storm)



Earthquake



Flood



Terrorism

TOUCHSTONE[®]



Understanding
Risk



Non-Cat Risk



Fire



Vandalism



Lightning

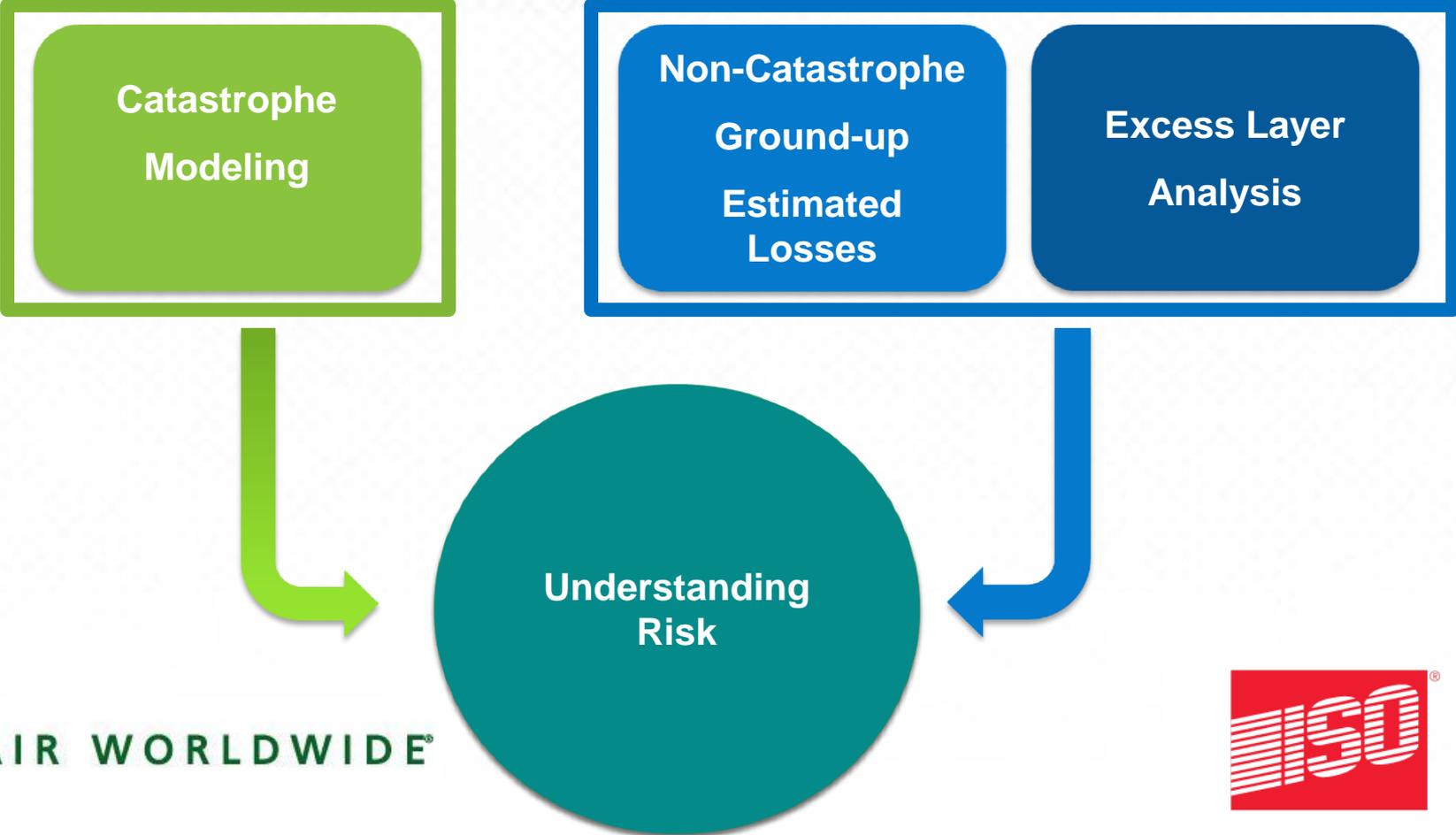


Explosion



Sprinkler Leakage

Touchstone Offers Ground-Up and Excess Layer Non-Catastrophe Loss Analytics



Availability of Non-Cat Analysis Capabilities in Touchstone Offer Significant Workflow Efficiencies

Touchstone Workflow

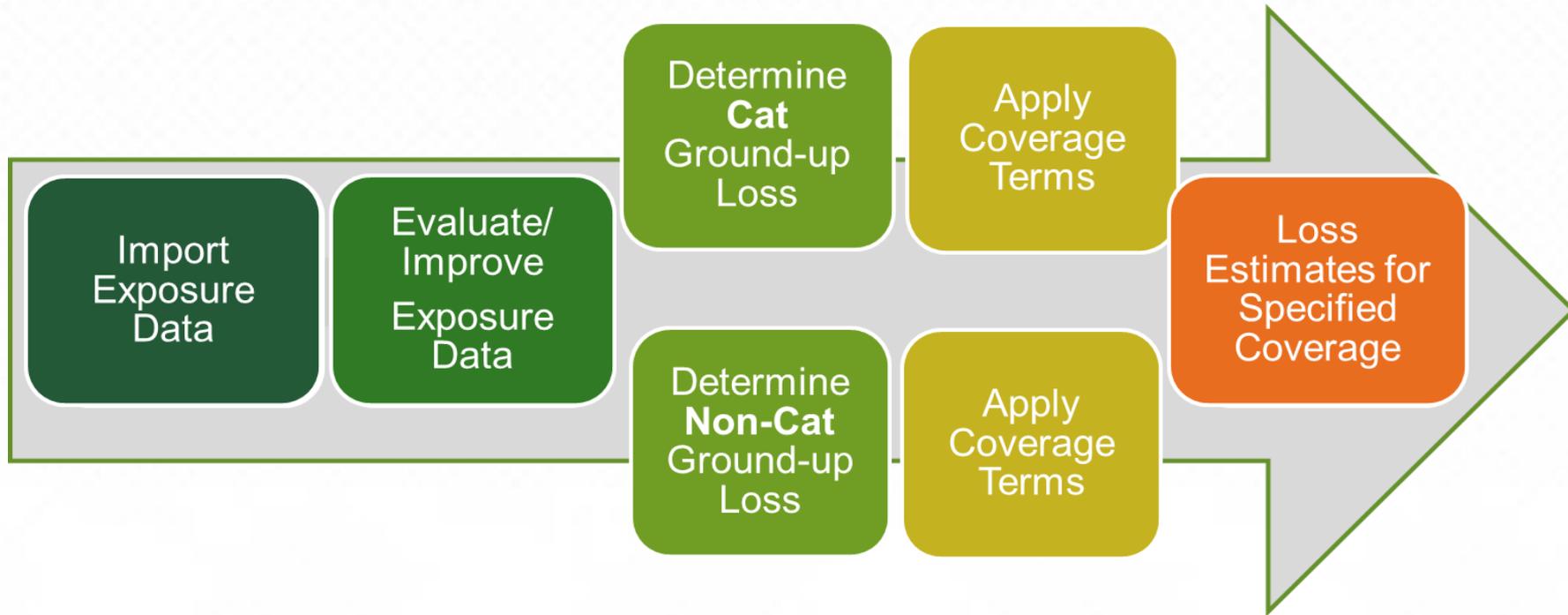


Non-Cat Workflow



Availability of Non-Cat Analysis Capabilities in Touchstone Offer Significant Workflow Efficiencies

Touchstone Workflow



...As Can Maplecroft Layers

Exposed Ground Up Sum and Total Replacement Value Sum for Accumulator Name an

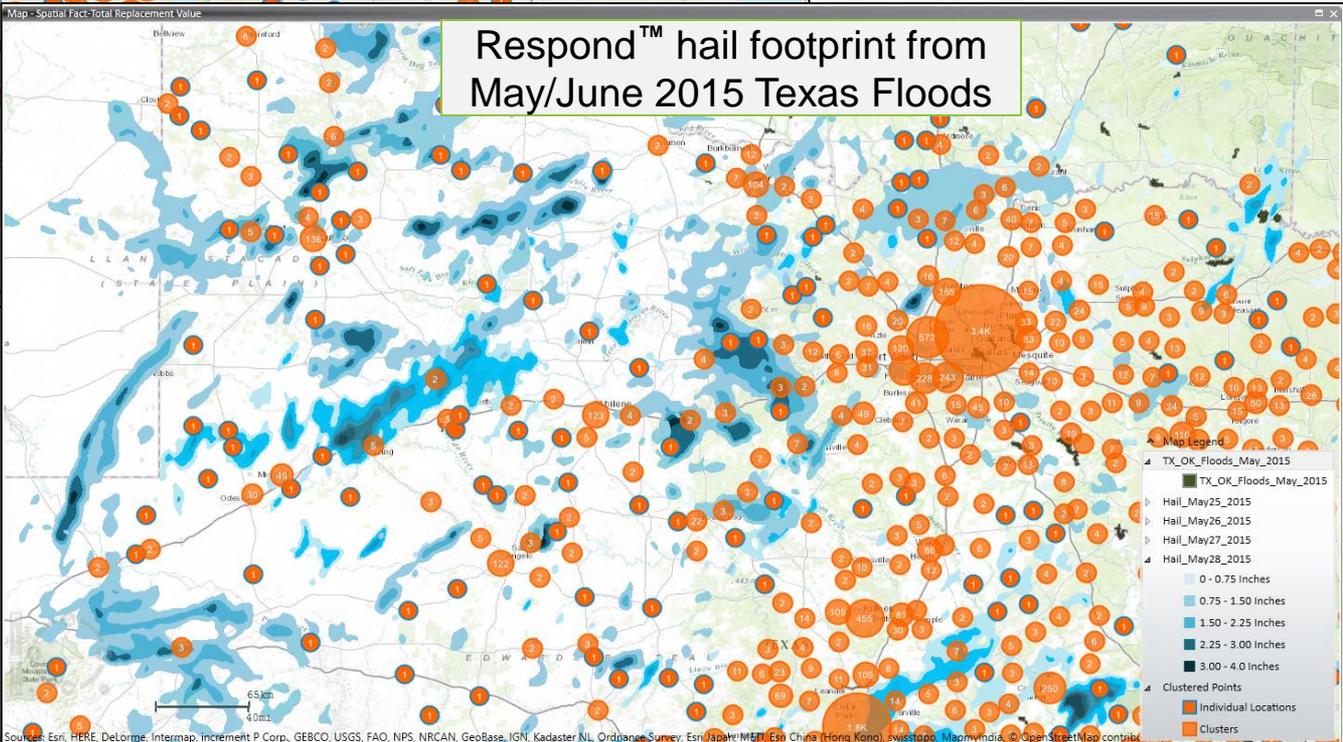
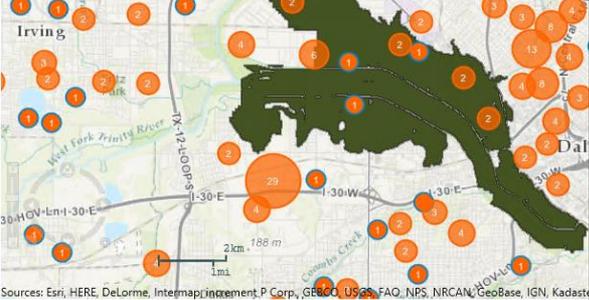
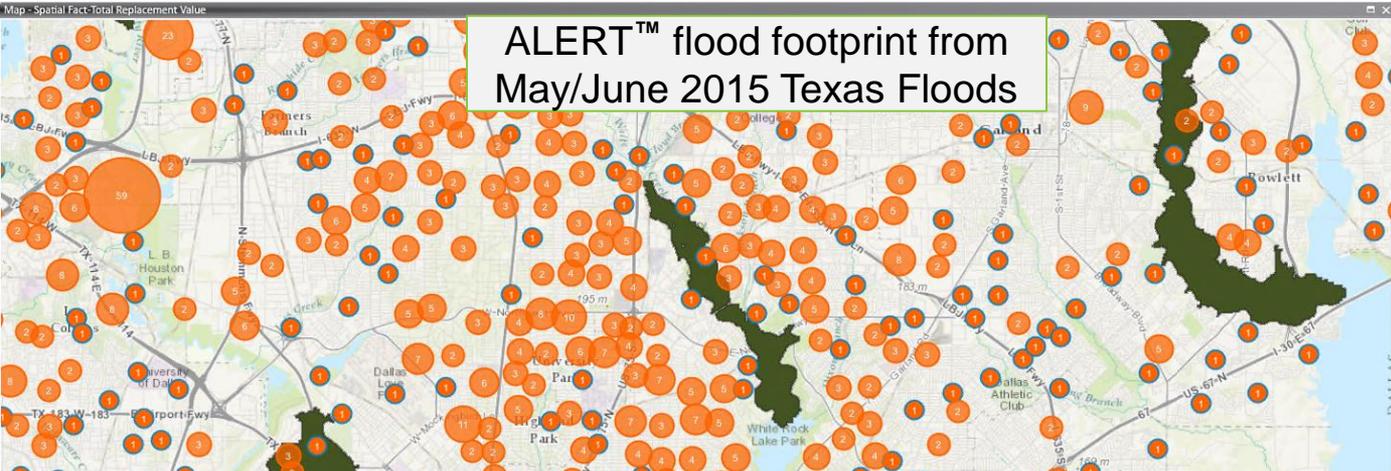
Exposed Group Measures

Accumulator

		Exposed Ground Up Sum	Total Replacement Value Sum
SA: CO		1,000,000	1,000,000
	2	7,000,000	7,000,000
	3	9,000,000	9,000,000
	4	5,000,000	5,000,000
	5	7,000,000	7,000,000
	6	1,000,000	1,000,000
	7	2,000,000	2,000,000
	8	2,000,000	2,000,000
	9	7,000,000	7,000,000
	10	1,000,000	1,000,000
All	42,000,000	42,000,000	
All	All	42,000,000	42,000,000



ALERT and Respond Layers Can Be Used in Touchstone to Assess Exposure in Real Time



Leveraging Verisk Data



PSOLD™



FireLine™



XACTWARE.



360Value®

Case Study – IFG Successfully Implements the Underwriting Mode in Touchstone

CASE STUDY

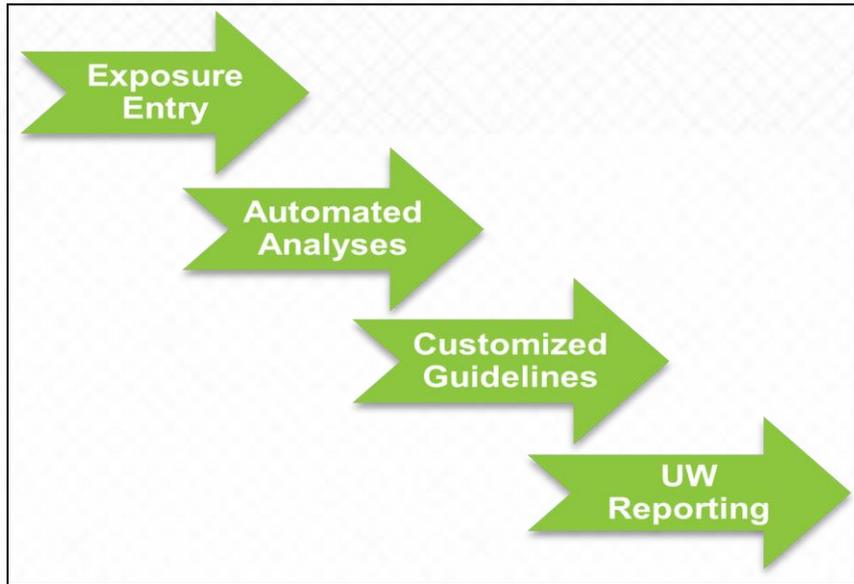
IFG Companies Successfully Implements the Underwriting Mode in Touchstone

To expand its business with a new commercial property line, IFG Companies (IFG) chose Touchstone as the foundation for its commercial underwriting workflow. With a comprehensive analytics solution provided by both AIR and Verisk, IFG now has the capabilities needed to execute its strategic growth plans.

Touchstone for Underwriting and Portfolio Management



Touchstone Offers Streamlined Account Underwriting and Portfolio Management Capabilities in a Single, State-of-the-Art Platform



Contract Summary

Contract ID	Insured Name	Inception Date	Expiration Date	Perils	Total Replacement Value	Total Deductible	Location Count	Layer Count
Lux Grupos	Lux_Hotels_America	03/01/2015	03/01/2016	CFEQ.FF.NC.PSAL	\$95,720,000	0	20	1

Exposure Map

Data Quality - Scoring

Overall Risk Score

Attribute	Indicator	Location
Fl Base Flood Elevation	●	95%
Fl Shortest Distance to 100-year Flc	●	60%
TC Coastal County	●	25%
EQ Distance to Nearest Fault	●	25%

Top Locations by Loss

ID	Location	AAI	Pre-
3	150 ANZA BLVD.BURLINGAME	236,736	0
48	2000 ESTERO BLVD.FORT MYERS BEACH	162,918	0
81	10100 S FIGUEROA STLOS ANGELES	41,414	0
30	433 W PICO BLVDLOS ANGELES	38,188	0
49	42200 ALBAIR ST.FREMONT	19,783	0
1	2500 STIRLING RD.HOLLYWOOD	19,085	0
37	2350 ERRINGER RD.SIMI VALLEY	16,562	0

Bar Charts:

- AAI = 606,958, SD = 2,58M
- Reference Portfolio vs Portfolio Impact
- Marginal Impact

Summary EP Table

Standard/TVAR	Agg/Occ	Perspective	AAI(EV)	SD	20	50	100
STD_EP	AGG	Ground Up	268,755,663	565,364,288	1,153,325,665	2,082,131,498	2,827,373,555
		Gross	4,754,854	15,894,621	20,738,415	41,288,254	70,757,303
	OCC	Ground Up	216,697,918	513,743,367	964,938,491	1,760,333,235	2,551,210,840
		Gross	4,263,020	15,307,306	18,077,113	37,897,959	66,393,404
STD_TVAR	AGG	Ground Up	268,755,663	565,364,288	2,212,161,835	3,277,443,667	4,145,761,115
		Gross	4,754,854	15,894,621	53,837,575	91,644,928	130,846,537
	OCC	Ground Up	216,697,918	513,743,367	1,969,326,139	3,003,073,723	3,877,303,548
		Gross	4,263,020	15,307,306	50,821,746	87,781,130	126,824,505

Historical Event Data:

Year	Event ID	Peril	Ground Up	Retained	Gross	Net of Pre-C.	Event Information
2008	55040	EQ	9,146,008,868	8,787,299,839	348,709,029	348,709,029	M11:IndustryLoss+613647465601.0; M...
2008	73176	EQ	5,616,789,882	5,315,857,070	300,932,812	300,932,812	M11:IndustryLoss+510894095125.0; M...
2008	139907	EQ	6,101,854,269	5,846,096,290	255,757,979	255,757,979	M11:IndustryLoss+90416285316.0; M...
2008	54823	EQ	5,132,518,097	4,879,798,457	252,719,640	252,719,640	M11:IndustryLoss+48126171909.0; M...
2008	88438	EQ	5,741,628,724	5,500,271,055	241,357,669	241,357,669	M11:IndustryLoss+25671832101.0; M...
2008	97406	EQ	5,906,111,638	5,678,442,602	227,669,036	227,669,036	M11:IndustryLoss+3888038905.0; M...
2008	130281	EQ	5,634,580,531	5,410,594,799	223,985,732	223,985,732	M11:IndustryLoss+384918631259.0; M...
2008	183756	EQ	5,337,902,808	5,114,037,141	223,875,667	223,875,667	M11:IndustryLoss+339333903812.0; M...
2008	44331	EQ	5,331,912,791	5,113,519,891	218,402,901	218,402,901	M11:IndustryLoss+36853700489.0; M...
2008	3495	EQ	5,238,100,443	5,028,966,517	209,133,926	209,133,926	M11:IndustryLoss+34981928025.0; M...
2008	80033	EQ	4,560,693,465	4,352,694,704	208,198,761	208,198,761	M11:IndustryLoss+45594844353.0; M...
2008	150984	EQ	4,898,667,607	4,692,840,353	205,827,254	205,827,254	M11:IndustryLoss+335478390496.0; M...

Exposed Gross Sum for Accumulator Name by Construction Category

Exposed Gro	Concrete	Equipment	Masonry	Miscellaneous	Steel	Unknown	Wood	All Total
Austria_BushFire	479,804					87,678,645		88,158,449
France_Wind	2,900,481					73,754,922	23,692	76,679,094
German_Wind	16,317,492	11,936,399			7,632,650	149,627,706		185,514,247
Japan_EQ	2,150,788				22,692,733	35,197,123	244,110	60,284,753
Other_EQ	39,545,143			52,976,010	135,301,824	435,092,058	310,429	663,225,463
Other_Wind	39,147,449			52,715,750	141,614,496	435,851,046	319,297	669,648,037
UK_Flood	5,268,405				3,275,291	177,303,896	322,021	198,483,880
UK_Wind	5,268,405				3,275,291	177,303,896	322,021	198,483,880
US_EQ	362,921,547				372,015,283	642,981	657,198,395	1,916,666,201
US_Wind	105,498,237	812,598	220,314,878		642,981	242,575,246	137,335,850	1,007,843
All AccumulatorName	579,497,749	812,598	734,586,856		1,285,962	1,213,565,925	1,800,811,341	166,555,633

AIR Has a Proven Track Record of Execution in Delivering a Growing Suite of Analytics in Touchstone...

Multi-Modeling and Non-Modeled Perils



Model Transparency

S_a ^{mph} **PGA**
m/s

Account Underwriting



Non-Cat Analytics



Flexibility to Adjust Model Output and Parameters



CAT Loss Analytics



Verisk Data



Data Quality Analytics



Enterprise Portfolio and Exposure Management



Hazard Analytics

Name	Date	Intensity	Distance	Intensity
Hugo	8/22/1989	4	3	4
Glenn	8/29/1959	3	35	5
Unrated	8/11/1940	2	40	2
Irene	10/13/1999	1	54	2
Unrated	10/11/1947	2	62	2

Geospatial Analytics



More to Come



APIs, Mobile and External Apps



...and a Clear Product Roadmap that Responds to Market Needs

Account Underwriting,
360 Value Integration

Mapping and Analytics

Loss Blending

AIR Cloud



Deterministic Models

Action (MPP)

Verisk/ISO Data and
Analytics

Enterprise Portfolio and
Exposure Management

Touchstone Has Been Widely Adopted by the Market

**120+ companies across the industry
have implemented Touchstone**

TOUCHSTONE®