

Accumulation Management and Advanced Geospatial Techniques

Managing Catastrophe Risk in Commercial Underwriting Webinar Series

Bill Walker, Senior Manager – Consulting and Client Services



Managing Catastrophe Risk in Commercial Underwriting Webinar Series



-
- | | |
|--------|---|
| 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 |
|---------|--|

Account Underwriting

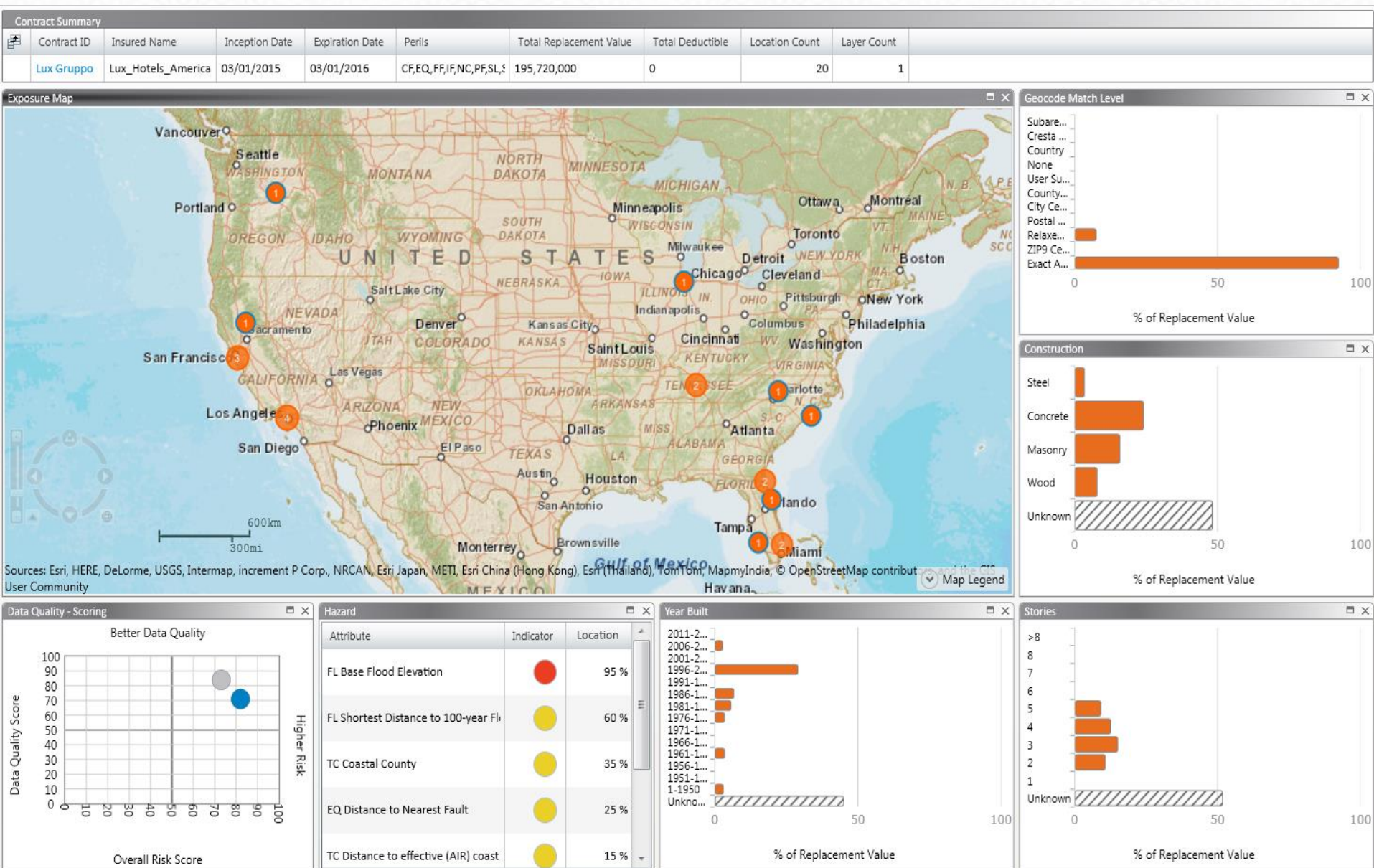


How Is an Excel Spreadsheet Turned into a Profitable Underwriting Decision?

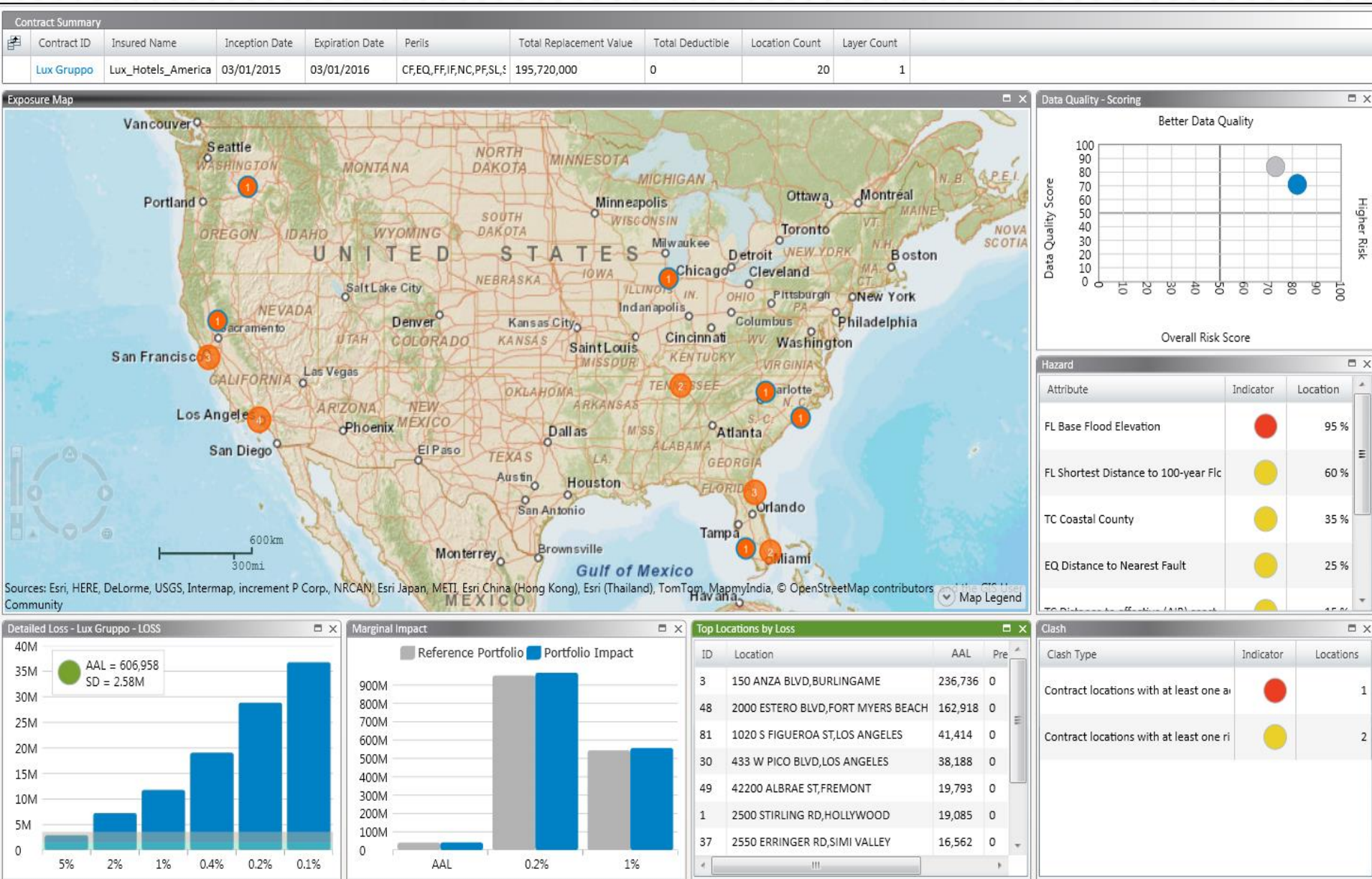
Street	City	State	Postal	Construction	Occupancy	YearBuilt	Stories	Sq Ft	PPC	Sprinkler	Building	Contents	TimeElement
2500 STIRLING RD	HOLLYWOOD	FL	33020	Reinforced Concrete	Temporary Lodging	1997	5	65271	2	Y	\$ 8,800,000	\$ 90,000	\$ 880,000
150 ANZA BLVD	BURLINGAME	CA	94010		Temporary Lodging			273698	1	Y	\$ 40,800,000	\$ 410,000	\$ 4,080,000
5001 W 79 ST	BURBANK	IL	60459	Steel	Temporary Lodging	1965	2	67090	7	Y	\$ 6,300,000	\$ 60,000	\$ 630,000
103 EASTPARK DR	BRENTWOOD	TN	37027	Masonry	Temporary Lodging	1986	2	75904	7	Y	\$ 5,000,000	\$ 50,000	\$ 500,000
1101 BEACH BLVD	JACKSONVILLE BEACH	FL	32250	Reinforced Concrete	Temporary Lodging	2008	3	54258	3	Y	\$ 5,000,000	\$ 50,000	\$ 500,000
433 W PICO BLVD	LOS ANGELES	CA	90015	Masonry	Temporary Lodging	2000	3	73625	8	Y	\$ 9,800,000	\$ 100,000	\$ 980,000
3135 S ATL													
2550 ERRIL													
1001 KLUM													
7120 S SPF													
2000 ESTE													
42200 ALBRAE ST	FREMONT	CA	94538	Unknown	Temporary Lodging	2000	5	75924	2	N	\$ 7,600,000	\$ 80,000	\$ 760,000
1100 EL CAMINO REAL	MILLBRAE	CA	94030		Temporary Lodging			23616	9	N	\$ 5,100,000	\$ 50,000	\$ 510,000
480 BOYNTON BEACH BLVD	BOYNTON BEACH	FL	33435	Reinforced Concrete	Temporary Lodging	1981	4	44210	9	N	\$ 4,700,000	\$ 50,000	\$ 470,000
151 VAN CAMPEN BLVD	WILMINGTON	NC	28403	Masonry	Temporary Lodging	1996	0	72740	3	Y	\$ 6,300,000	\$ 60,000	\$ 630,000
2066 BIRD ST	OROVILLE	CA	95965	Unknown	Temporary Lodging	1929	0	56211	8	Y	\$ 5,500,000	\$ 60,000	\$ 550,000
4681 LENOIR AVE	JACKSONVILLE	FL	32216	Reinforced Concrete	Temporary Lodging	2000	4	53136	6	Y	\$ 4,500,000	\$ 50,000	\$ 450,000
1020 S FIGUEROA ST	LOS ANGELES	CA	90015		Temporary Lodging			143954	3	Y	\$ 18,100,000	\$ 180,000	\$ 1,810,000
8822 CYNTHIA ST	WEST HOLLYWOOD	CA	90069	Reinforced Concrete	Temporary Lodging	1979	4	68715	5	N	\$ 6,200,000	\$ 60,000	\$ 620,000
486 BRADLEY BLVD	RICHLAND	WA	99352	Woodframe	Temporary Lodging	1996	3	89684	8	N	\$ 6,500,000	\$ 70,000	\$ 650,000

TOUCHSTONE®

Own the Risk in Commercial UW in Touchstone®



Own the Risk in Commercial UW in Touchstone®



Touchstone Answers Your Questions

How can Cat management prepare for an oncoming hurricane or respond to an unexpected Cat event?

How have my exposed limits changed since last quarter/month/week/night?

Are UW guidelines being adhered to?

What are my exposed limits?

Where are my peak concentrations?

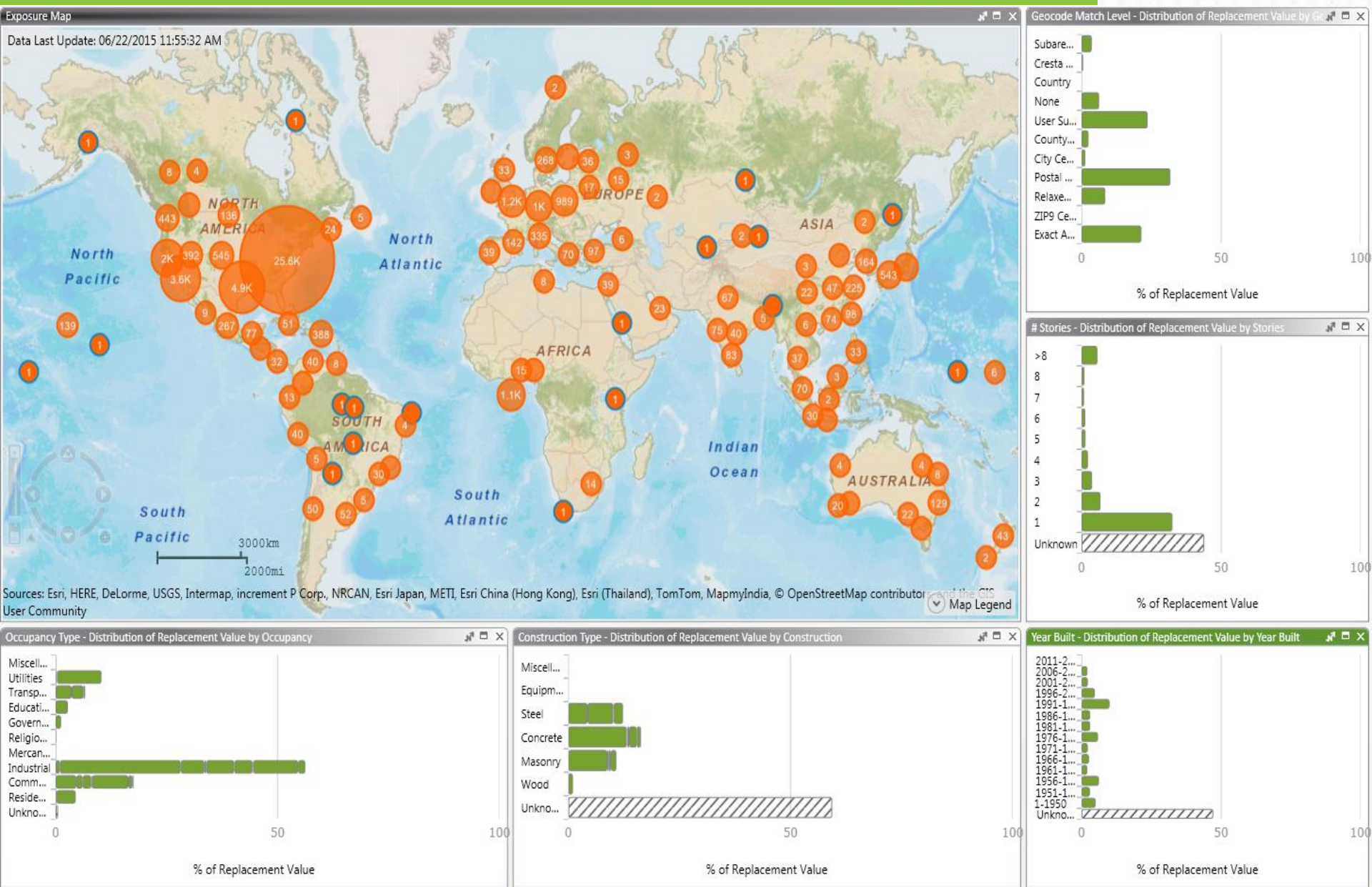
How are reinsurers tracking my accumulations?



Portfolio Analytics



Visualize Enterprise-wide Exposures

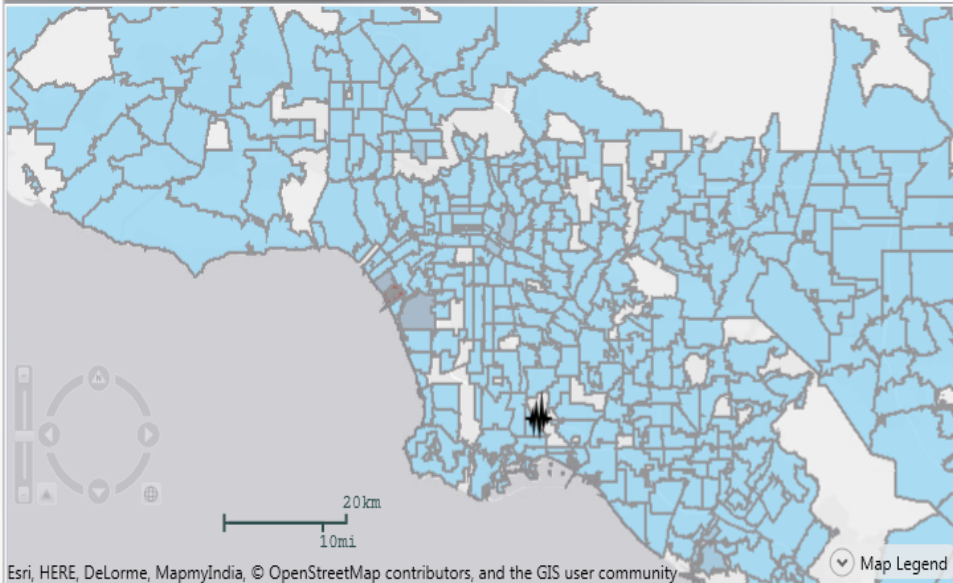


Evaluate Distribution of Losses

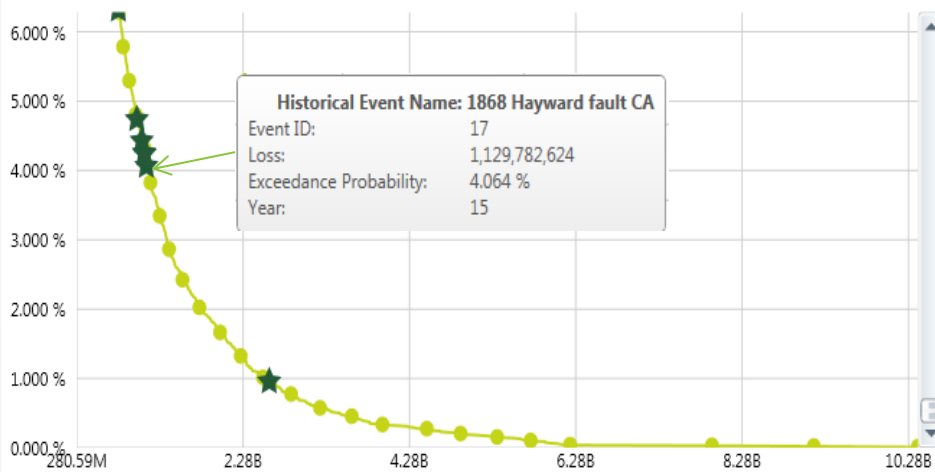
Summary EP Table

Standard/TVAR	Agg/Occ	Perspective	AAL(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	1,760,323,235	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	53,937,575	91,644,928	130,846,527
	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

Map



Annual EP Chart - Enterprise



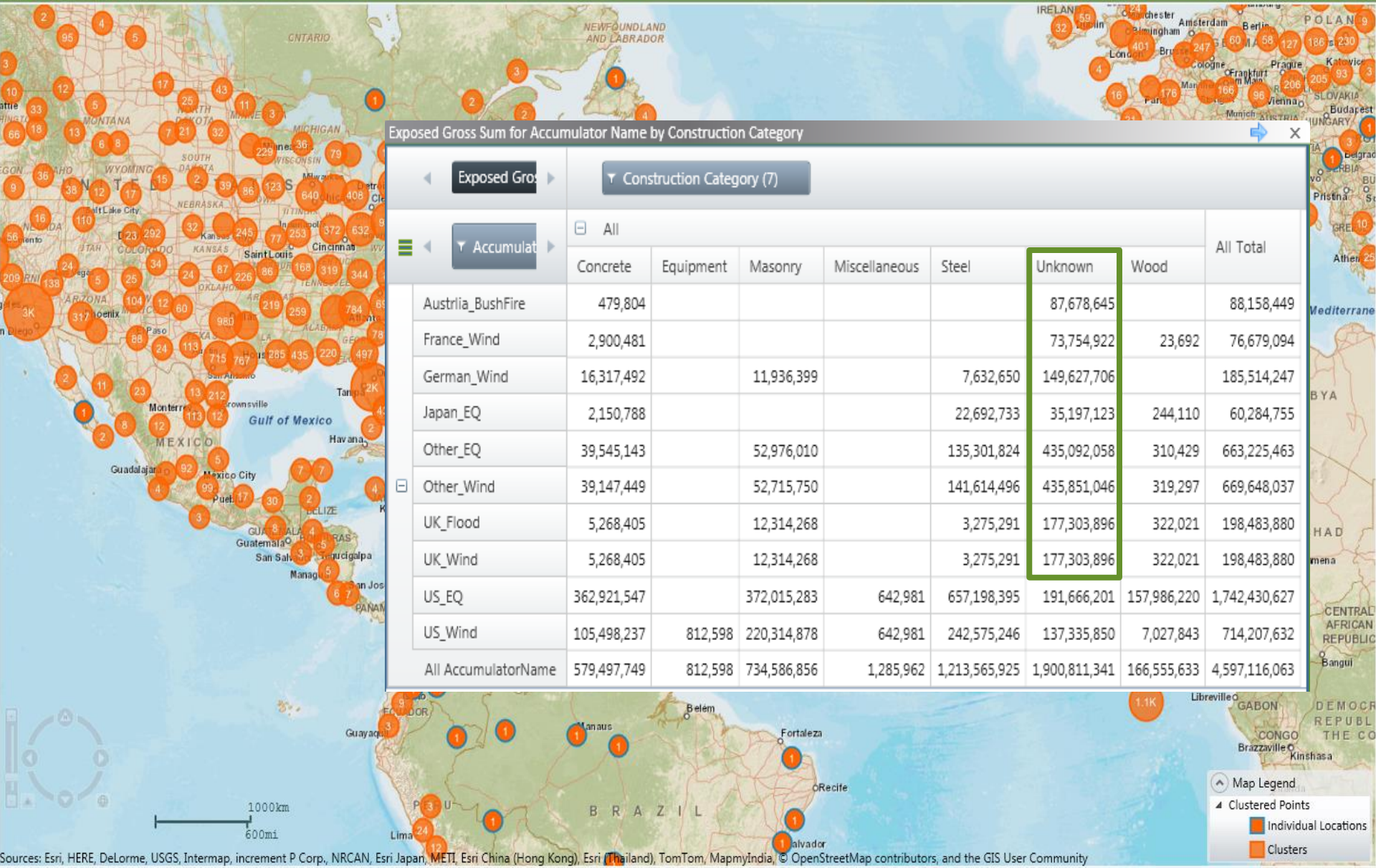
Event Loss Summary Table - Enterprise

Year	Event ID	Peril	Ground Up Mean	Retained Mean	Gross Mean	Net of Pre-C Mean	Event Information
2908	55040	EQ	9,146,008,868	8,797,299,839	348,709,029	348,709,029	M11: IndustryLoss=613642465601.0; Mw
3790	71376	EQ	5,616,789,882	5,315,857,070	300,932,812	300,932,812	M11: IndustryLoss=510894095125.0; Mw
7220	135907	EQ	6,101,854,269	5,846,098,290	255,755,979	255,755,979	M11: IndustryLoss=306416285316.0; Mw
2896	54823	EQ	5,132,518,097	4,879,798,457	252,719,640	252,719,640	M11: IndustryLoss=458162171909.0; Mw
4705	88438	EQ	5,741,628,724	5,500,271,055	241,357,669	241,357,669	M11: IndustryLoss=295671832101.0; Mw
5187	97406	EQ	5,906,111,638	5,678,442,602	227,669,036	227,669,036	M11: IndustryLoss=388680368905.0; Mw
6918	130281	EQ	5,634,580,531	5,410,594,799	223,985,732	223,985,732	M11: IndustryLoss=384918631259.0; Mw
9762	183756	EQ	5,337,902,808	5,114,027,141	223,875,667	223,875,667	M11: IndustryLoss=239333095812.0; Mw
2337	44231	EQ	5,531,922,791	5,313,519,891	218,402,901	218,402,901	M11: IndustryLoss=368053700489.0; Mw
181	3495	EQ	5,238,100,443	5,028,966,517	209,133,926	209,133,926	M11: IndustryLoss=349813928025.0; Mw
4248	80033	EQ	4,560,693,465	4,352,494,704	208,198,761	208,198,761	M11: IndustryLoss=245594844353.0; Mw
8022	150984	EQ	4,898,667,607	4,692,840,353	205,827,254	205,827,254	M11: IndustryLoss=335478390496.0; Mw

Zonal Accumulations

Monitor Global Accumulations

Map - Spatial Fact-Total Replacement Value

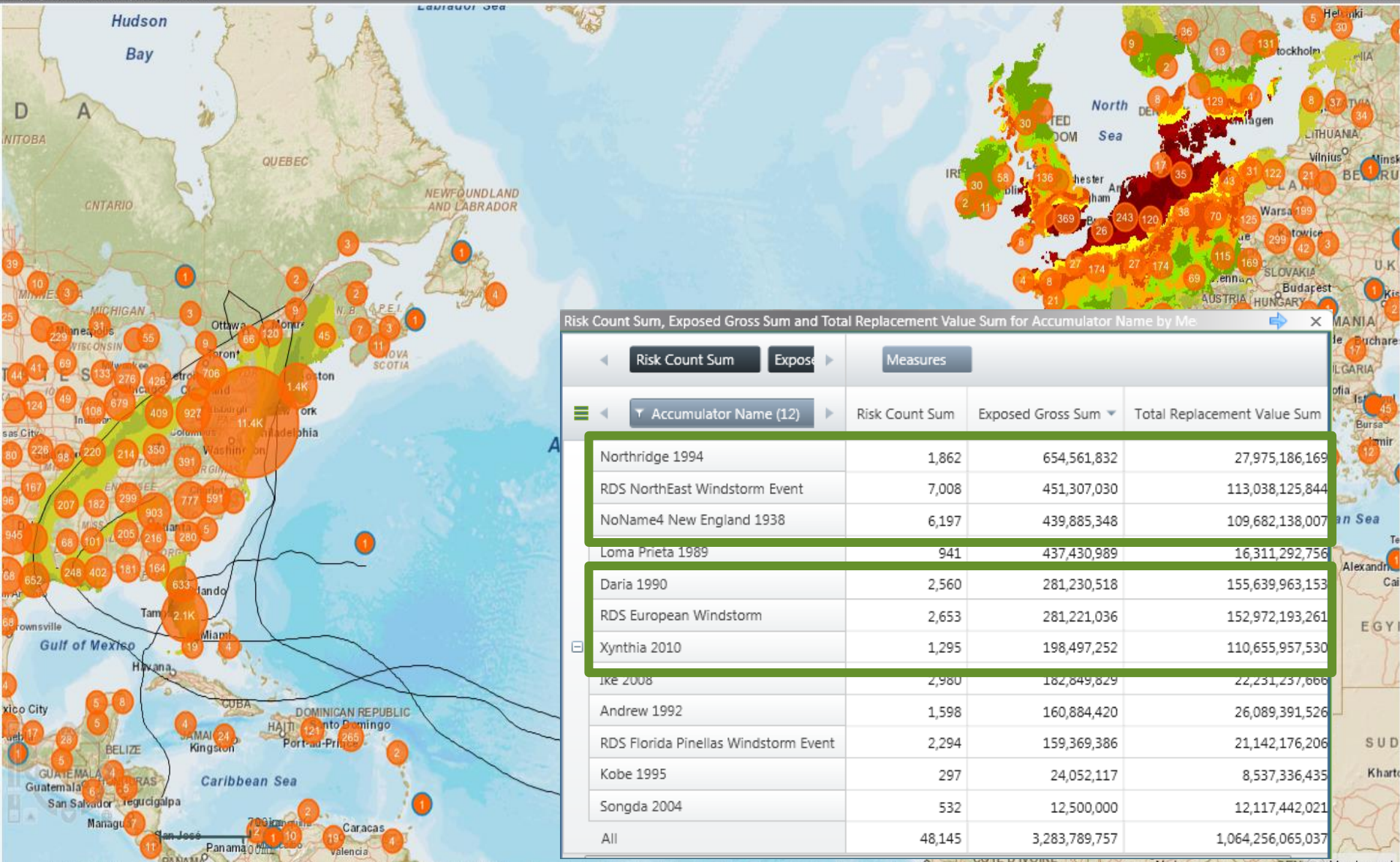


Risk Disaster Scenario and Historical Footprints



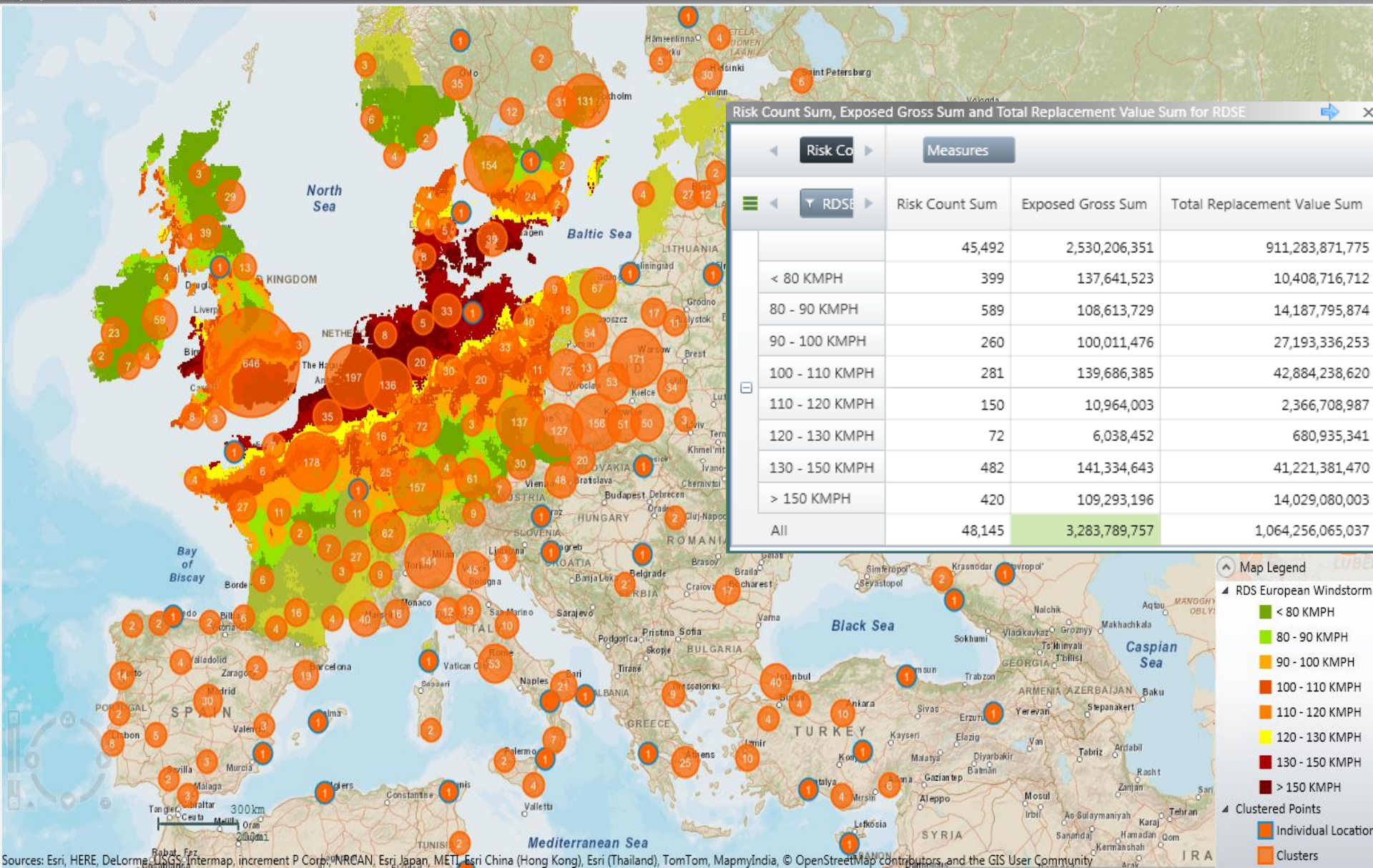
Monitor Response to RDS and Historical Events

Map - Spatial Fact-Total Replacement Value



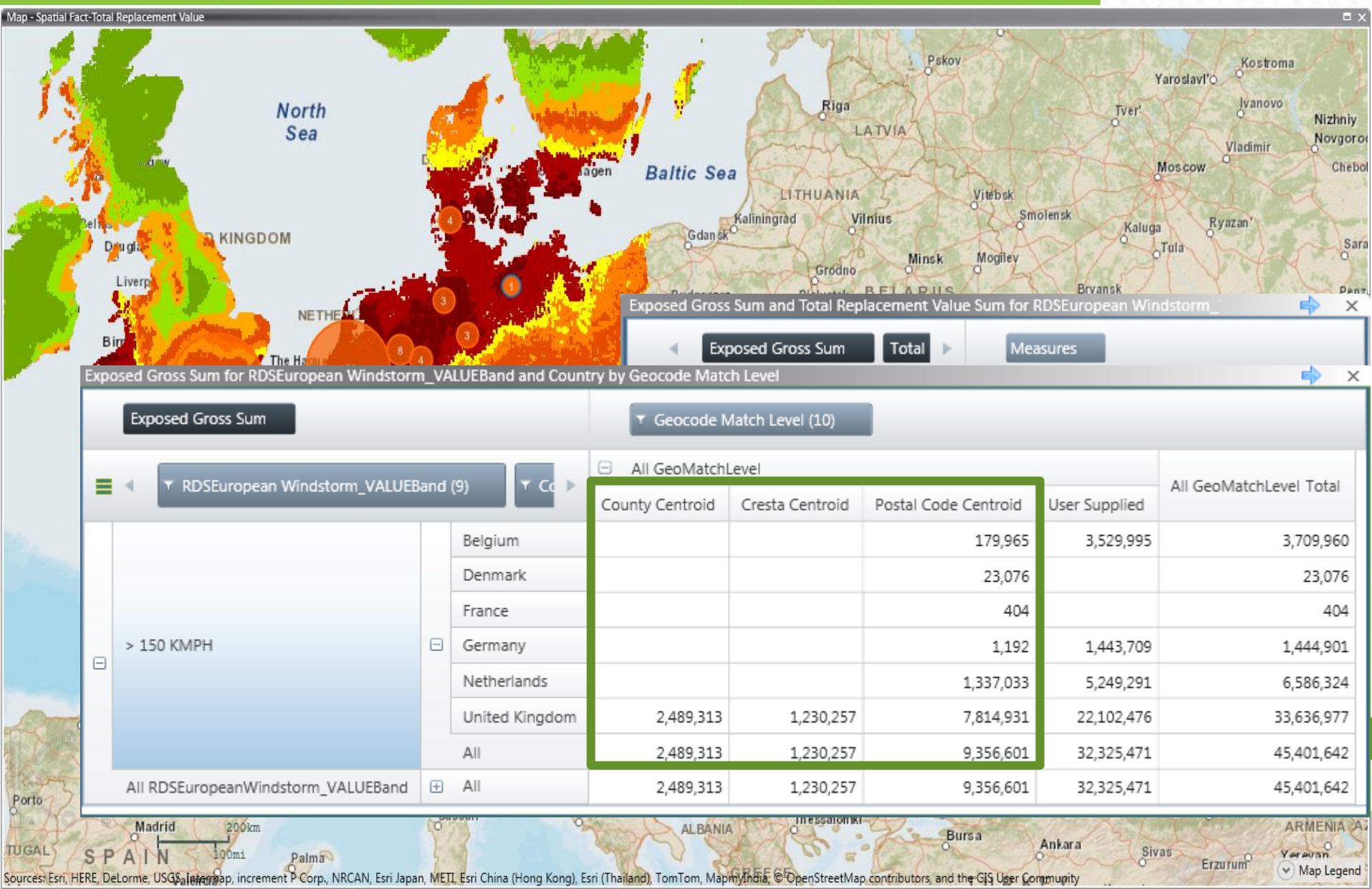
Quantify Exposed Gross in RDS Footprint

Map - Spatial Fact-Total Replacement Value



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Identify Uncertainty Due to Data Quality



Peak Concentrations



Dynamic Ring Analysis Identifies Peak Concentrations



Identify Contributing Locations and Layers

Ring Info			Perspectives			Attributes				
Name	Latitude	Longitude	Ground Up	Gross	Net of Pre-CAT	Total Replacement Value	Risk Count	Location Count	Peril	
Dynamic Ring 1113	41.06337	-74.01282	4,119,579,000	50,000,001	50,000,001	4,119,579,000	1	1	TR	
Dynamic Ring 629	40.75771	-73.98573	1,163,695,688	31,374,456	31,374,456	1,163,695,688	12	12	TR	
Dynamic Ring 625	40.7571	-73.98445	927,383,704	25,409,119	25,409,119	927,383,704	9	9	TR	
Dynamic Ring 210	40.70401	-74.01154	548,392,781	25,122,548	25,122,548	548,392,781	24	24	TR	
Dynamic Ring 381	40.73239	-73.9768	913,960,647	25,000,000	25,000,000	913,960,647	27	27	TR	
Dynamic Ring 437	40.73501	-73.97745	866,971,996	25,000,000	25,000,000	866,971,996	22	22	TR	
Dynamic Ring 438	40.73503	-73.97731	886,296,771	25,000,000	25,000,000	886,296,771	22	22	TR	
Dynamic Ring 443	40.73513	-73.97795	866,158,594	25,000,000	25,000,000	866,158,594	22	22	TR	
Dynamic Ring 444	40.73515	-73.97782	884,094,653	25,000,000	25,000,000	884,094,653	22	22	TR	
Dynamic Ring 401	40.73309	-73.97839	472,913,975	25,000,000	25,000,000	472,913,975	14	14	TR	
Dynamic Ring 411	40.73367	-73.97894	516,796,932	25,000,000	25,000,000	516,796,932	17	17	TR	

First | Prev 1 2 3 4 5 ... Next | Last

Layer Info			Perspectives			Attributes		Term						
Insured	Layer ID	Contract ID	Ground Up	Gross	Net of Pre-CAT	Total Replacement Value	Peril	Limit Type	Total Limit	Participation	Deductible Type	Deductible Amount 1	Deductible Amount 2	Attachment Amount
AIR	14	AIR_Comm_14	553,582,813	17,500,000	17,500,000	553,582,813	TR	Excess Limit	350,000,000	17,500,000	Minimum Deductible Amount	250,000	0	150,000,000
Contract : B70569-2012/55_4_2			347,013,783	4,676,378	4,676,378	347,013,783	TR	Excess Limit	250,000,000	25,000,000	Maximum Deductible Amount	0	250,000	300,000,000
AIR	1	AIR_Comm_1	18,459,702	2,500,000	2,500,000	18,459,702	TR	Excess Limit	2,500,000	2,500,000	Minimum Deductible Amount	100,000	0	7,500,000
AIR	20	AIR_Comm_20	8,327,406	732,741	732,741	8,327,406	TR	Excess Limit	25,000,000	2,500,000	Minimum Deductible Amount	1,000,000	0	0

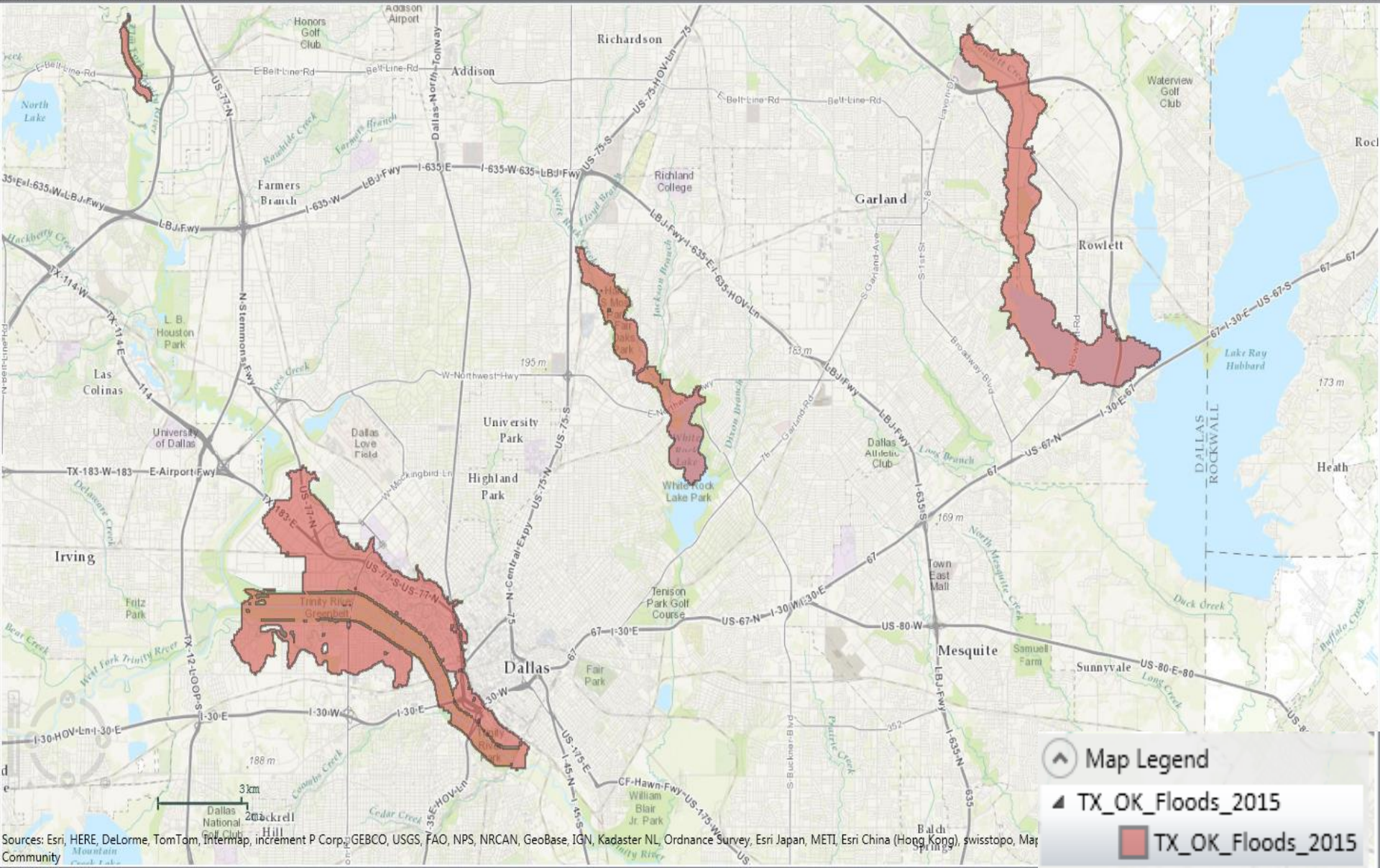
First | Prev 1 Next | Last

Responding in Real Time to Catastrophes



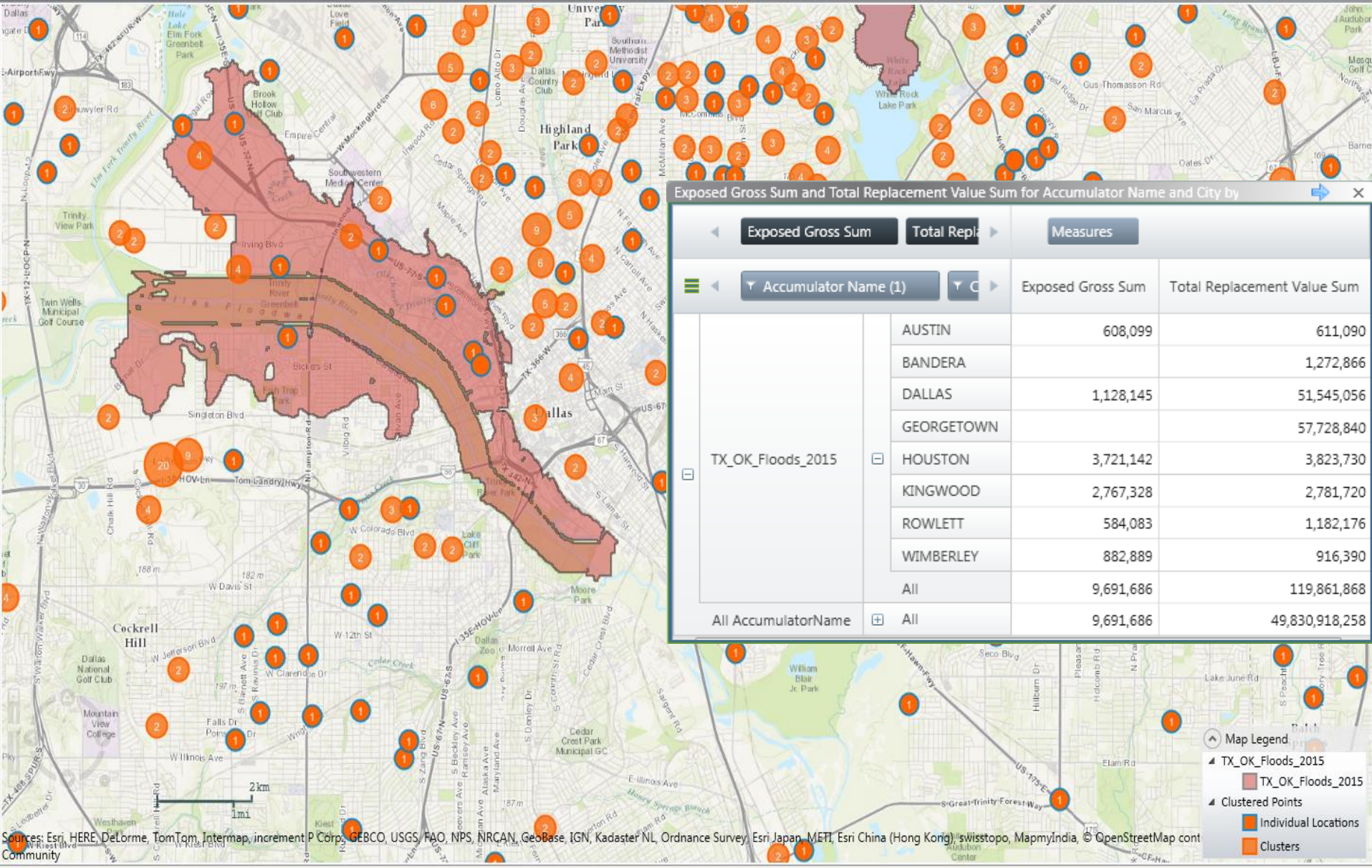
Respond in Real Time to Catastrophes

Map - Spatial Fact-Total Replacement Value



Exposure at Risk

Map - Spatial Fact-Total Replacement Value

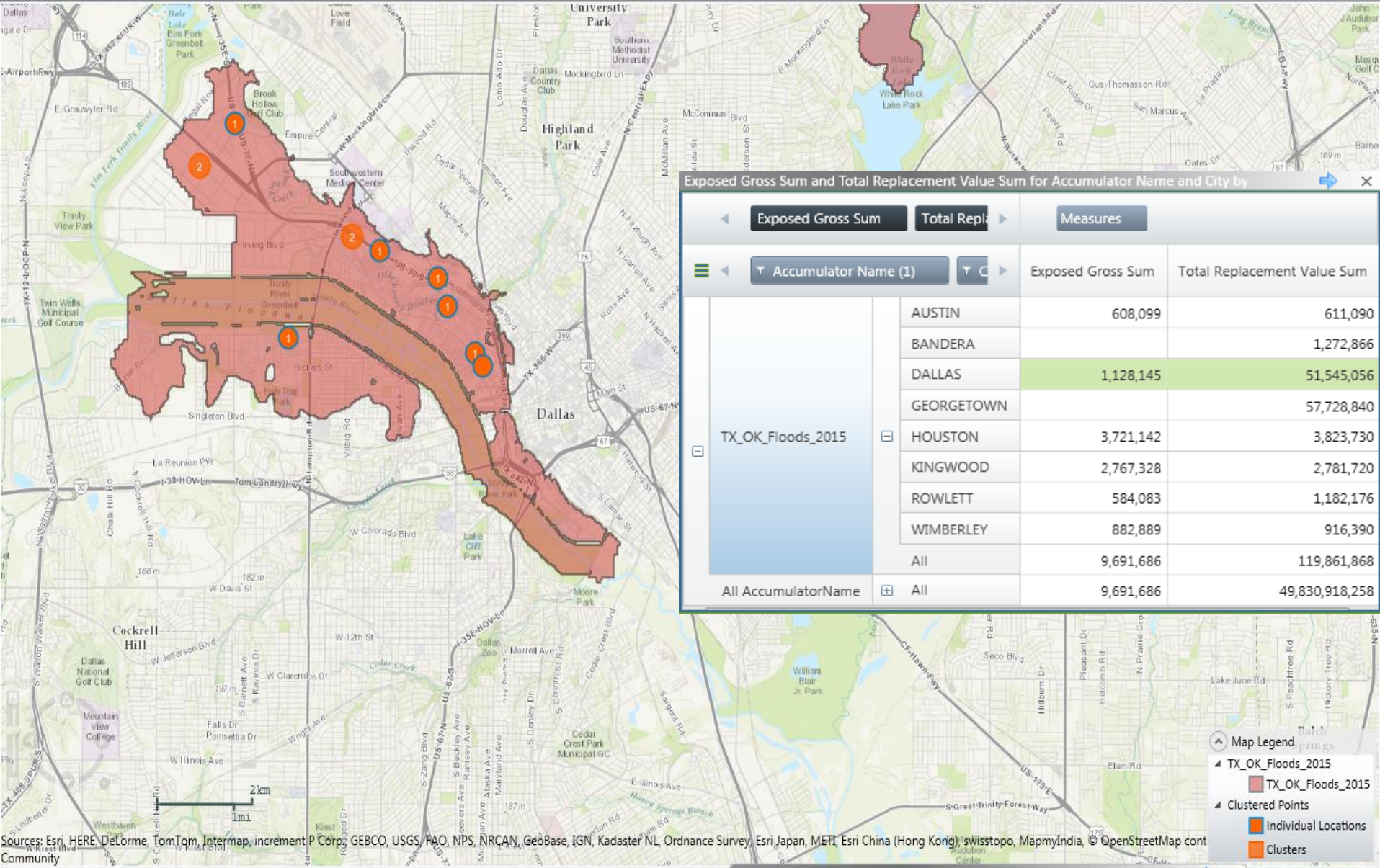


Exposed Gross Sum and Total Replacement Value Sum for Accumulator Name and City by

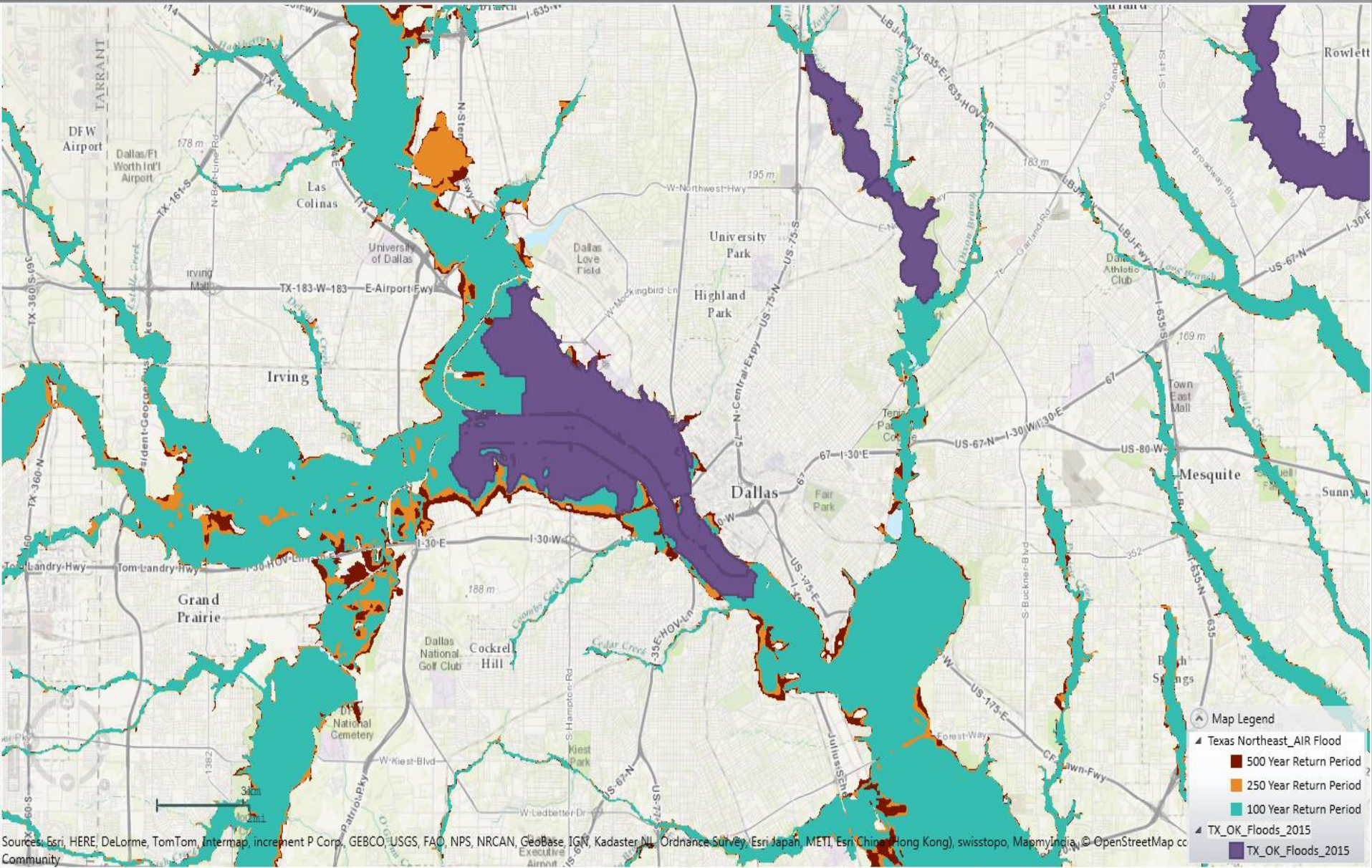
Exposed Gross Sum		Total Replacement Value Sum	Measures
Accumulator Name (1)	City	Exposed Gross Sum	Total Replacement Value Sum
TX_OK_Floods_2015	AUSTIN	608,099	611,090
	BANDERA		1,272,866
	DALLAS	1,128,145	51,545,056
	GEORGETOWN		57,728,840
	HOUSTON	3,721,142	3,823,730
	KINGWOOD	2,767,328	2,781,720
	ROWLETT	584,083	1,182,176
	WIMBERLEY	882,889	916,390
All AccumulatorName	All	9,691,686	119,861,868
		9,691,686	49,830,918,258

Exposure Impacted

Map - Spatial Fact-Total Replacement Value

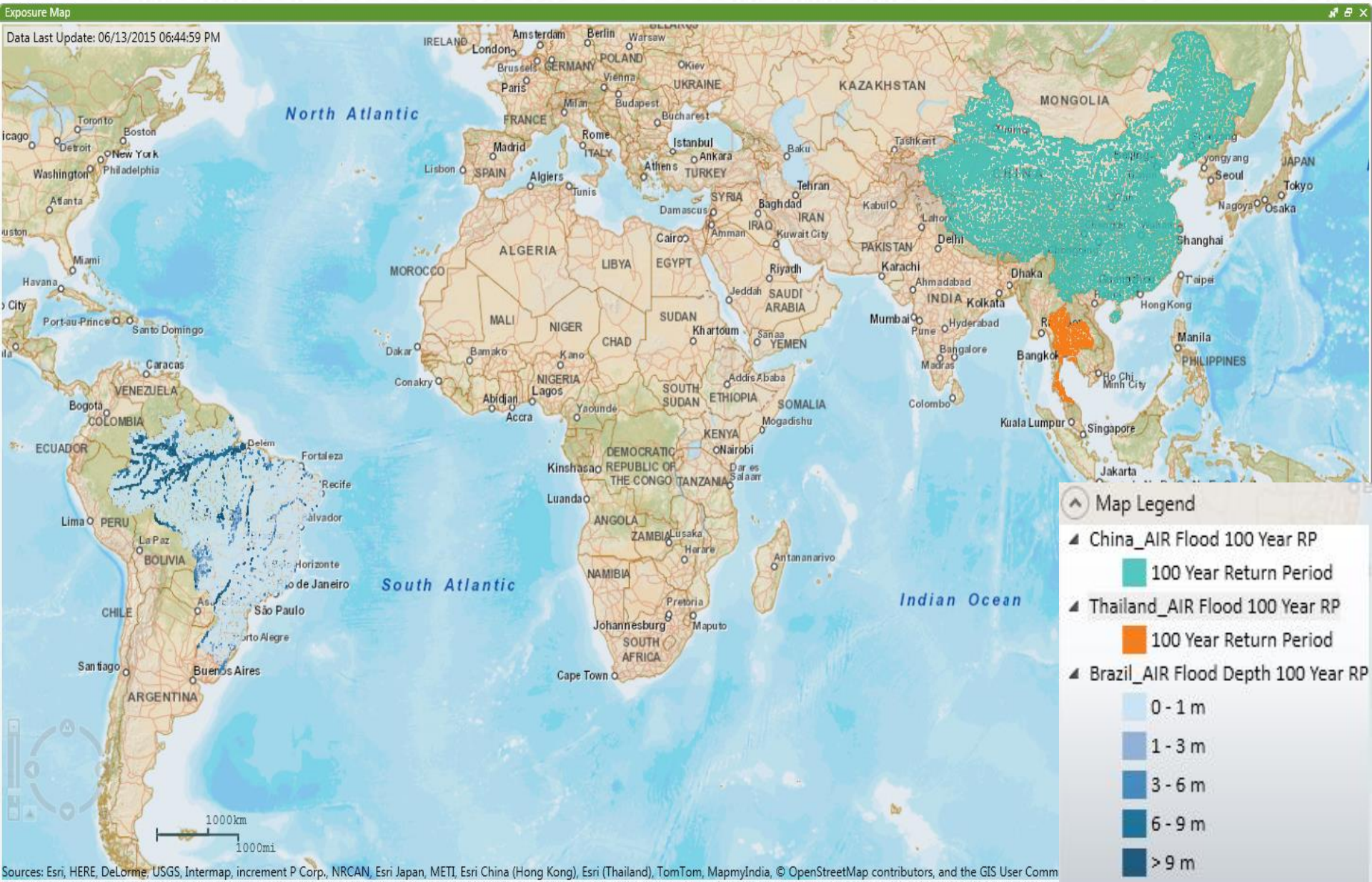


Accumulate Against AIR Flood Hazard Maps



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCO, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap cc Community

Evaluate Global Accumulations in Non-Modeled Regions

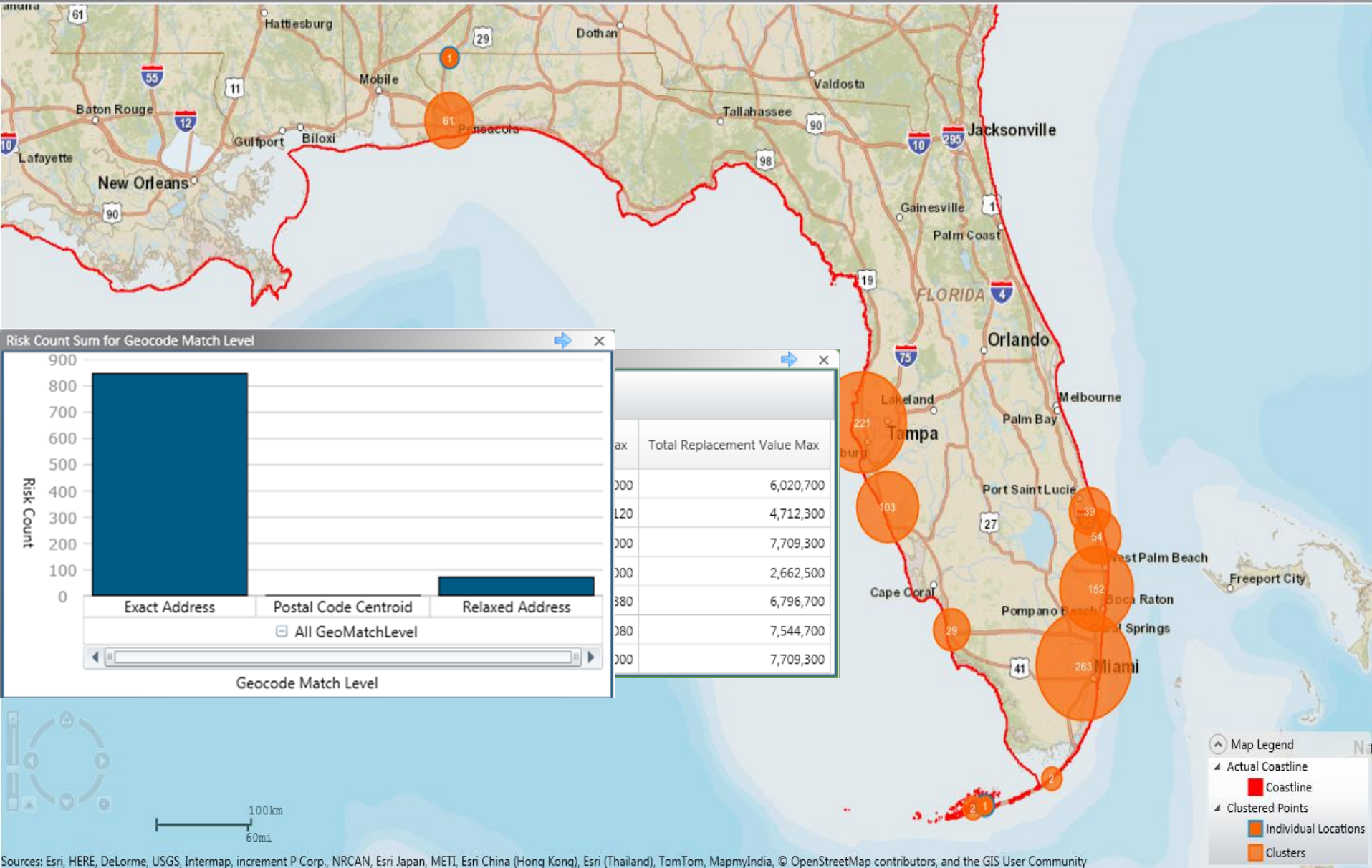


Evaluating Producers



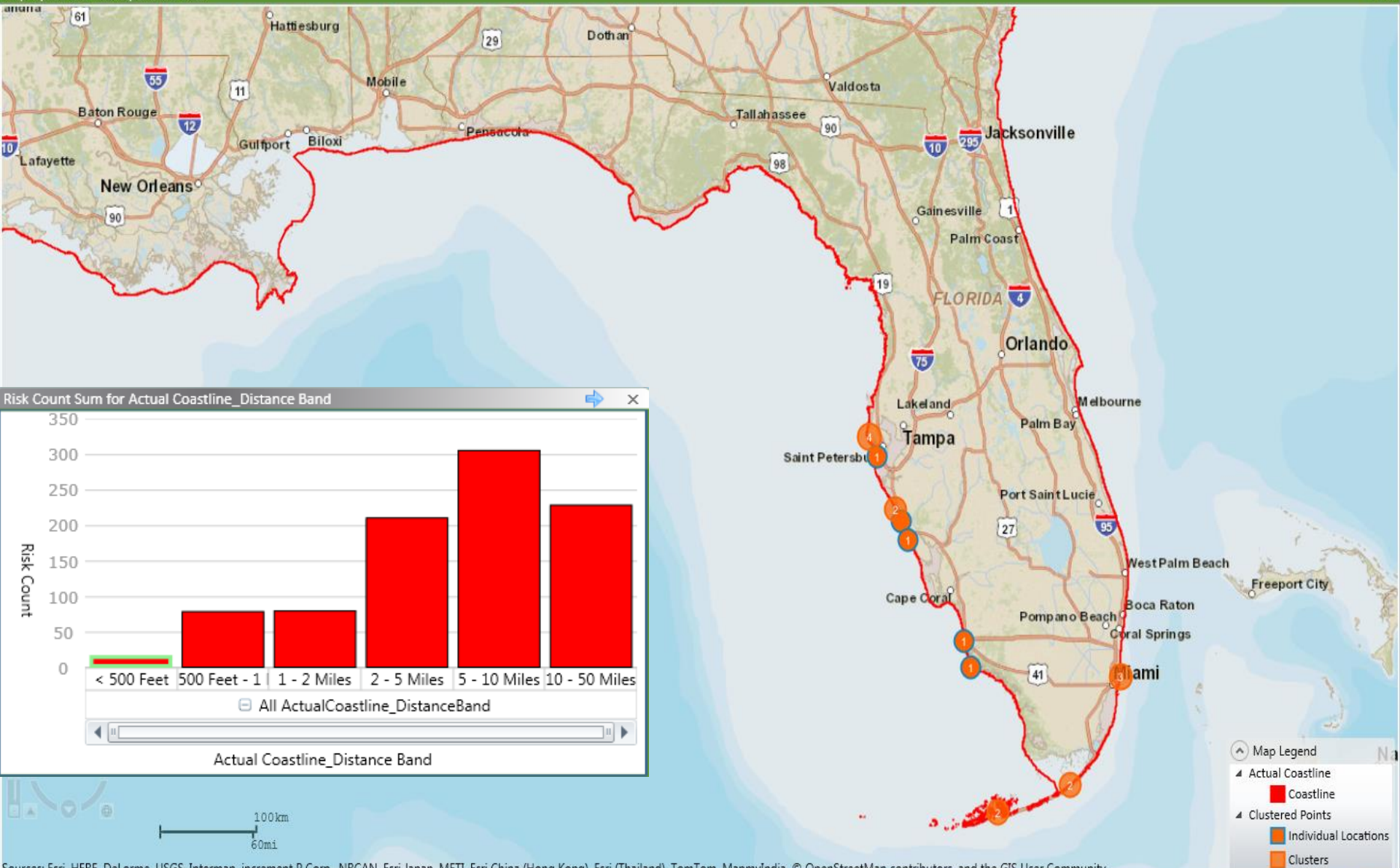
Evaluate Compliance with Guidelines

Map - Spatial Fact-Total Replacement Value



Check Distance to Coast

Map - Spatial Fact-Total Replacement Value



Investigate Violations

Map - Spatial Fact-Total Replacement Value

Location Name:
Insured Name:
Contract Name:

1
HVH_Program_Manager
HVH_Program_88

Geography

Address:
City:
State:
Postal Code:
Geocode Match Level:
Latitude:
Longitude:

15-11TH AVE SOUTH
NAPLES
Florida
34102
Exact Address
26.134033° N
81.805770° W

Primary Characteristics

Construction Code:
Occupancy Code:
Year Built:
Stories:

Masonry
Permanent dwelling: single-family
1994
1

Replacement Values

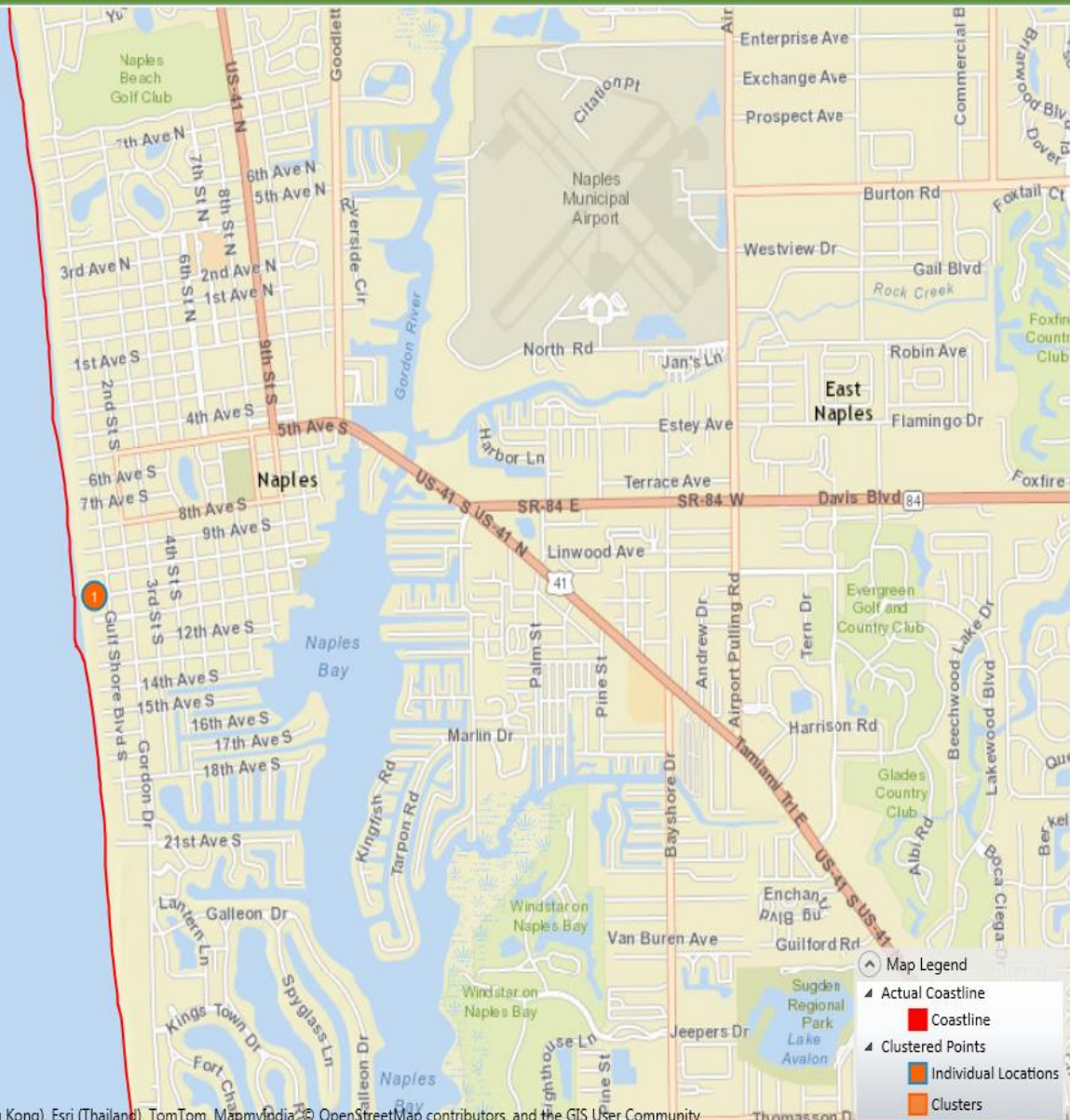
Total Replacement Value:
Building (Coverage A):
Other Structures (Coverage B):
Contents (Coverage C):
Time Element (Coverage D):

3,425,100 USD
1,657,800 USD
331,560 USD
1,326,240 USD
109,500 USD

Actual Coastline

Distance:

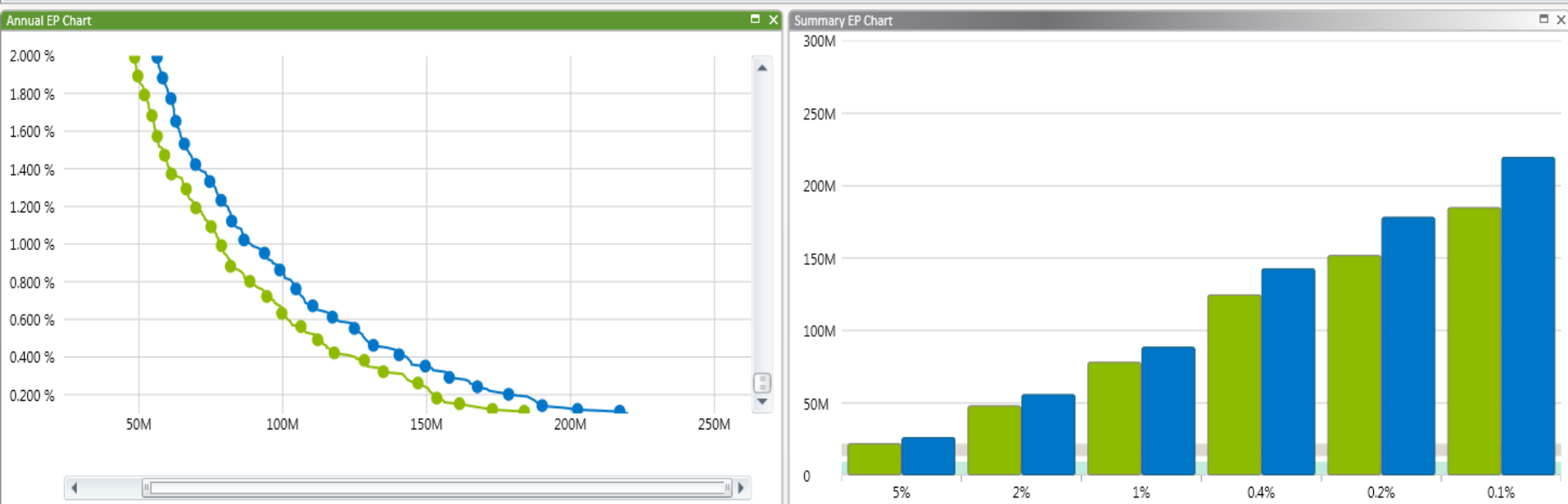
0.08 mi



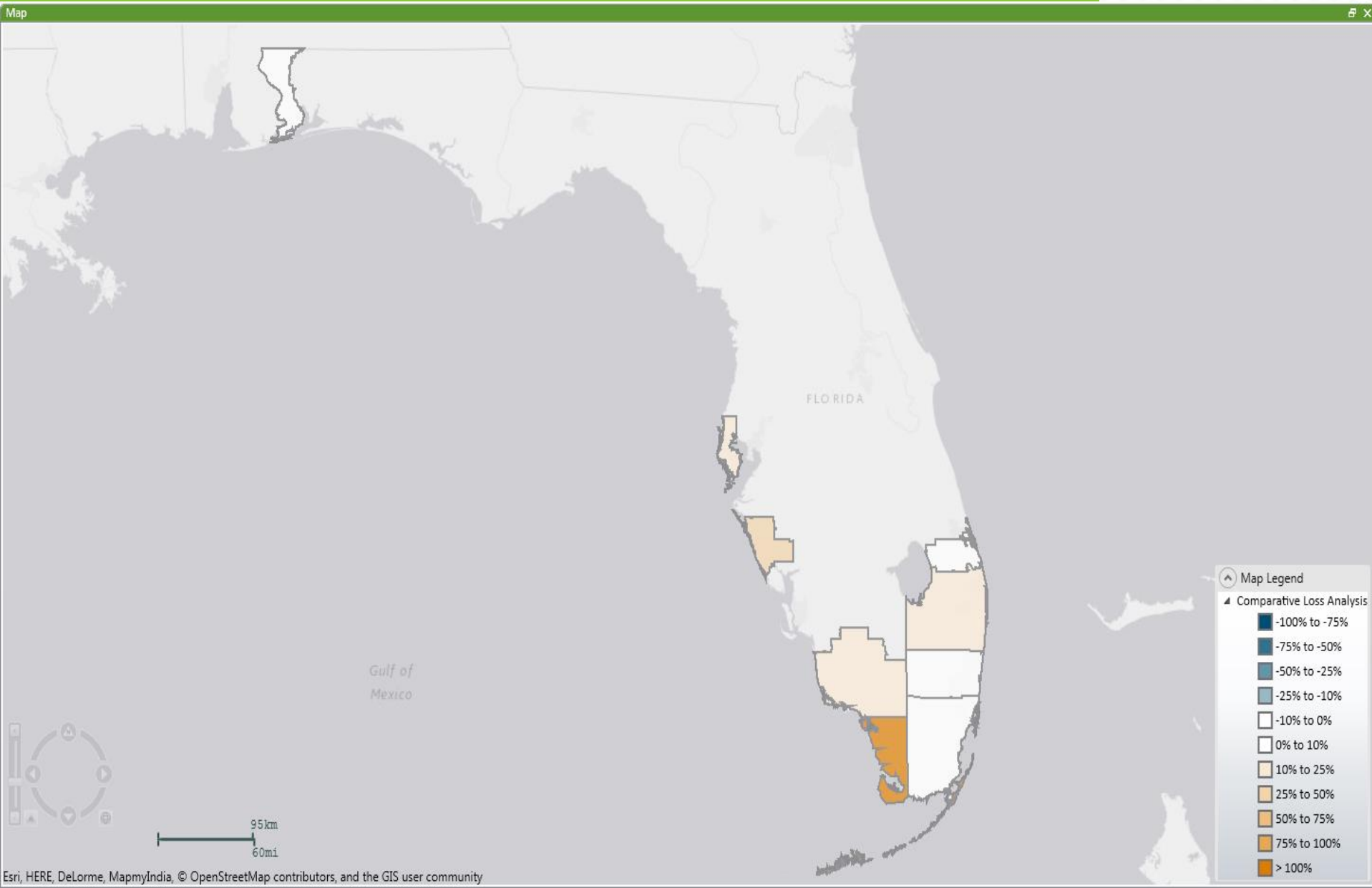
700m
2000ft

Evaluate Changes in Risk Over Time

Summary EP Table										
Perspective	Name	AAL(EV)	SD	5%	2%	1%	0.4%	0.2%	0.1%	
Ground Up	April	5,016,060	17,843,142	24,904,555	54,694,807	89,299,266	141,498,615	178,685,193	222,407,340	
Ground Up	May	5,864,867	20,512,871	30,020,931	62,072,459	101,108,929	161,606,409	210,650,180	262,862,153	
Ground Up	May - April	16.92%	14.96%	20.54%	13.49%	13.23%	14.21%	17.89%	18.19%	
Gross	April	4,391,919	15,397,303	22,371,078	48,468,434	78,574,449	125,061,434	152,212,146	185,284,519	
Gross	May	5,161,423	17,723,511	26,510,418	56,230,118	88,921,421	143,041,709	178,594,445	220,000,143	
Gross	May - April	17.52%	15.11%	18.5%	16.01%	13.17%	14.38%	17.33%	18.74%	



Monitor Geographic Changes in Geography



Touchstone Answers Your Questions

How can cat management prepare for an oncoming hurricane or respond to an unexpected cat event?

How have my exposed limits changed since last quarter/month/week/night?

Are UW guidelines being adhered to?

What are my exposed limits?

Where are my peak concentrations?

How are reinsurers tracking my accumulations?



Own the risk.®

Touchstone Answers Your Questions

How can cat management prepare for an oncoming hurricane or respond to an unexpected cat event?

What are my exposed limits?

How have my exposed limits changed since last quarter/month/week/night?

Where are my open concentrations?

Are UW guidelines being adhered to?

How are reinsurers tracking my accumulations?

TOUCHSTONE®

Own the risk.®



Join Us for the Last Webinar in the Series!



When?

July 14

Topic?

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