

# **Sensitivity of Form A8 to grid points**

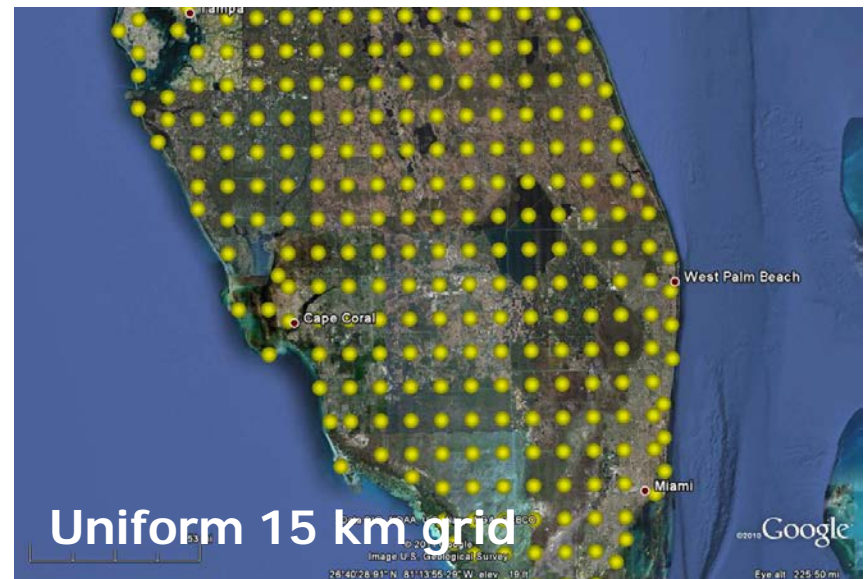
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**ROA11 Form A8: Percentage Change in Logical Relation to Risk**

# Sensitivity of results in ROA11 Form A8 to Grid selection

- Tests to show ‘Sensitivity’ of % Change for RMS model
  - ROA 09 results Form A-7 (FHCF data)
  - Grid B (336 points)
  - Grid A (40 points)
  - Uniform 15 km grid (664 points)
  - FHCF zips uniformly weighted (~1500)
  
- Last 4 cases use uniform weighting of all points vs. FHCF Total Value weighting

Construction / Policy	Region	Percent Change in Loss Cost			
		Coverage A	Coverage B	Coverage C	Coverage D
Frame Owners	Coastal				
	Inland				
	North				
	Central				
	South				
	Statewide				
Masonry Owners	Coastal				
	Inland				
	North				
	Central				
	South				
	Statewide				



# Coverage sensitivity

## ■ Form A8 – ROA11

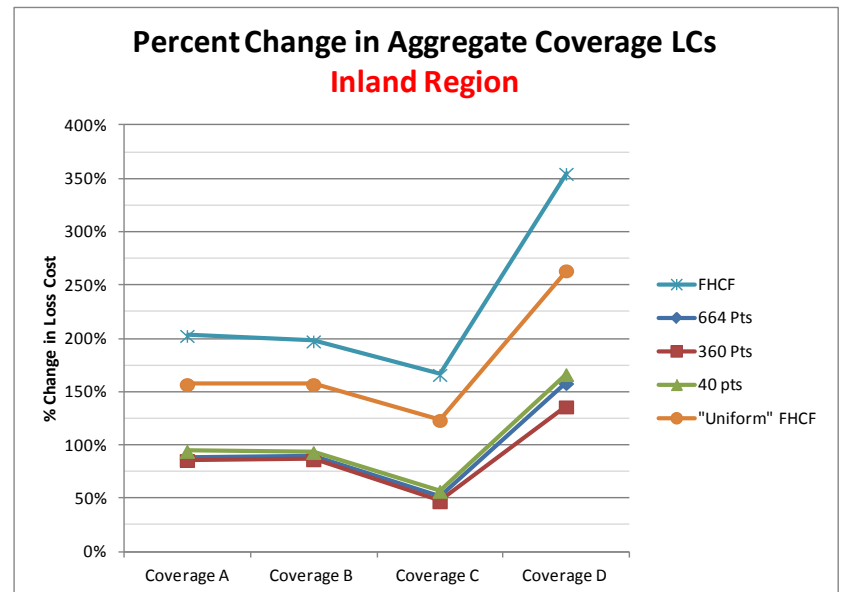
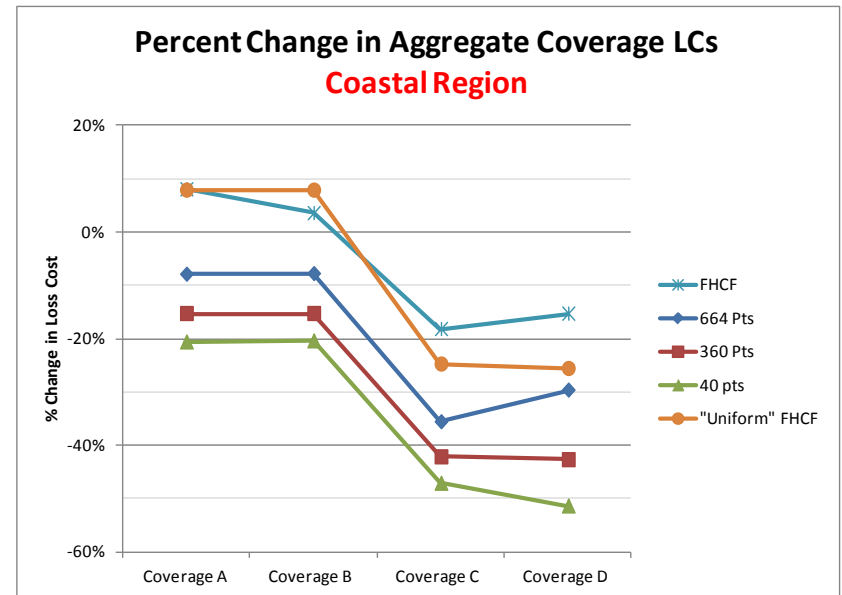
Construction / Policy	Region	Percent Change in Loss Cost			
		Coverage A	Coverage B	Coverage C	Coverage D
Masonry Owners	Coastal	-15.3%	-15.3%	-42.2%	-42.7%
	Inland	86.1%	86.8%	47.4%	136.4%
	North	-18.9%	-18.5%	-42.1%	-27.3%
	Central	49.6%	50.0%	10.4%	18.9%
	South	-15.3%	-15.3%	-45.3%	-48.5%
	Statewide	2.5%	2.9%	-30.7%	-28.1%

## ■ Form A7 – ROA09

		\$0 Deductible			
		Structure	Contents	Appurtenant Structure	Add Living Exp
Masonry Owners	Coastal	8.00%	-18.21%	3.53%	-15.33%
	Inland	202.94%	166.38%	197.79%	355.01%
	North	-4.24%	-20.32%	-4.96%	2.58%
	Central	63.72%	21.25%	62.59%	37.81%
	South	3.95%	-21.69%	-1.22%	-20.48%
	Statewide	17.14%	-10.69%	12.47%	-5.27%

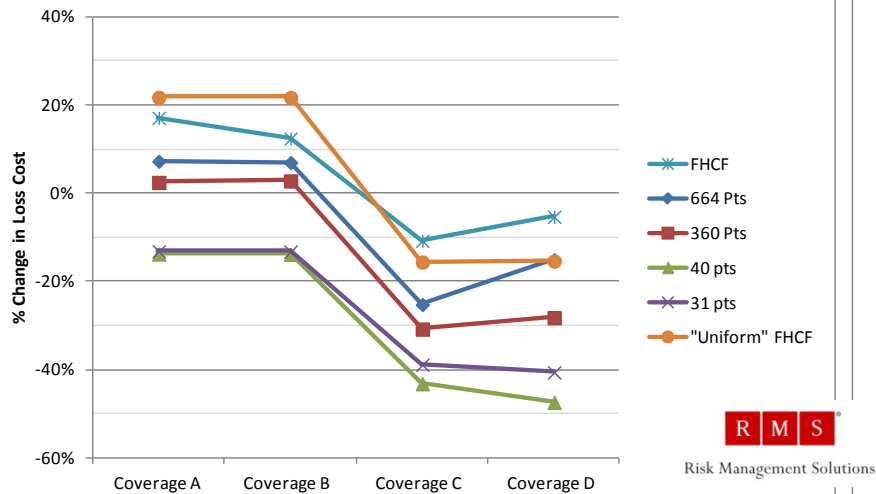
# Comparison of Coverage Level Percent Change: ROA09 Form A7 vs. ROA11 Form A8

- Notice that for inland region, there is little difference between 336 points and 664 points indicating 336 points are enough to be statistically stable.
- Uniform FHCF case lies between the ROA09 results and the other grids because zip centroids tend to be correlated (but not 100%) with building value density.
- The significant difference between any of the uniformly weighted grid results and FHCF weighting are related to the TIV weighting which is embedded in existing form.

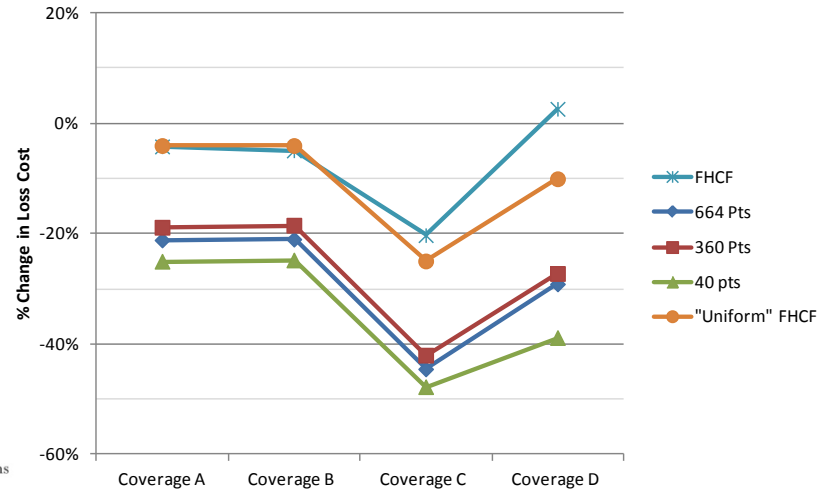


# % Change in Coverage LC by Region

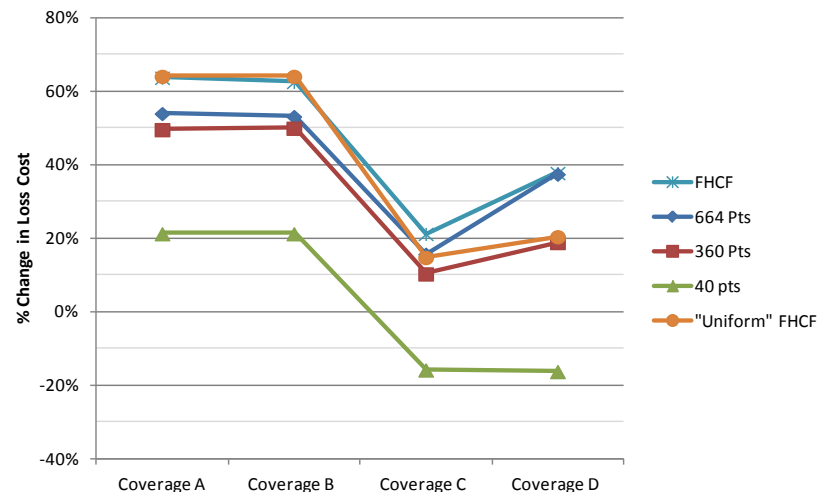
Percent Change in Aggregate Coverage LCs  
Statewide



Percent Change in Aggregate Coverage LCs  
North



Percent Change in Aggregate Coverage LCs  
Central

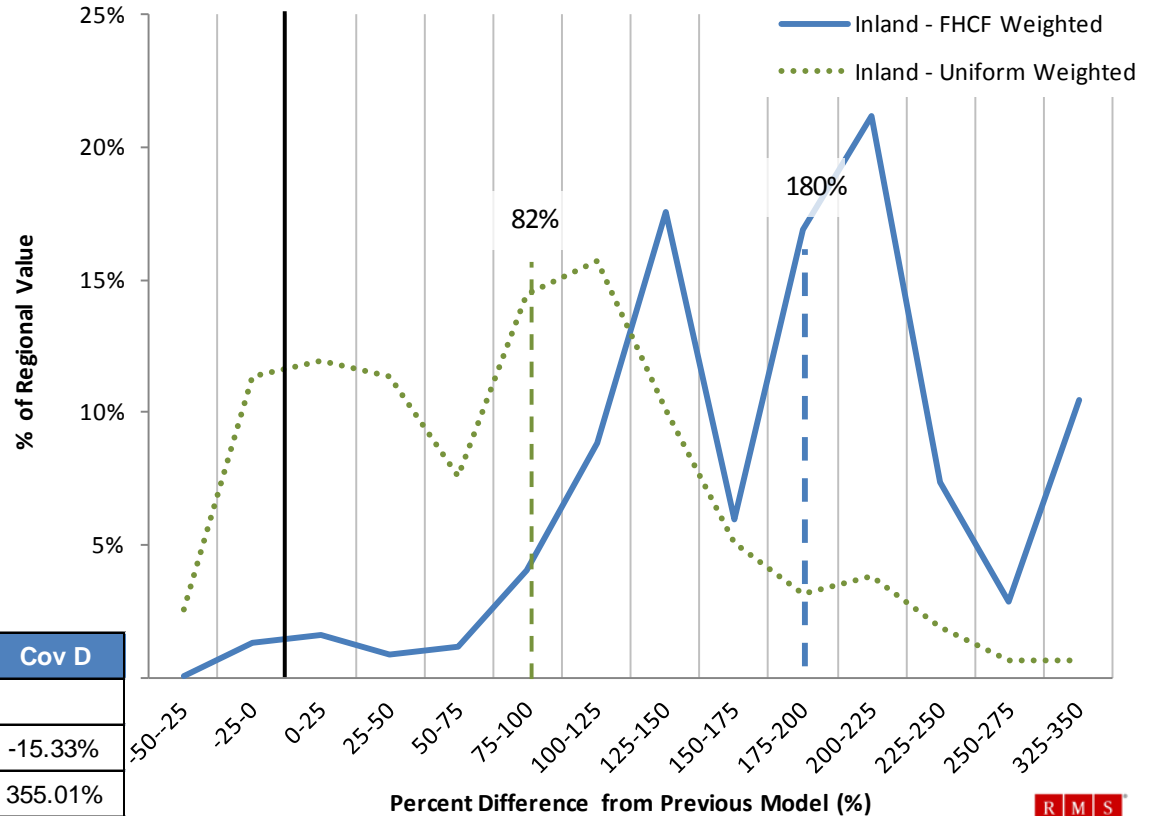


- Similar trends to previous slide but points grouped into north/central/south county regions
- None of these 'Grids' will reproduce existing form without FHCF weights.
- But should they?? – if form is to simply detect change, but not quantify magnitude, then uniform weighting with any of the Grids is adequate.



# Effect of FHCF weighting Masonry Owners distribution results – Inland

- Chart to left shows of Distribution of Change in model for Coverage A calculated using Grid B points with FHCF weighting vs. uniform weighting.
- Note that FHCF weighting of points starts to approximate last years form.
- Last years form includes secondary modifier attributes which prevents getting an exact match.



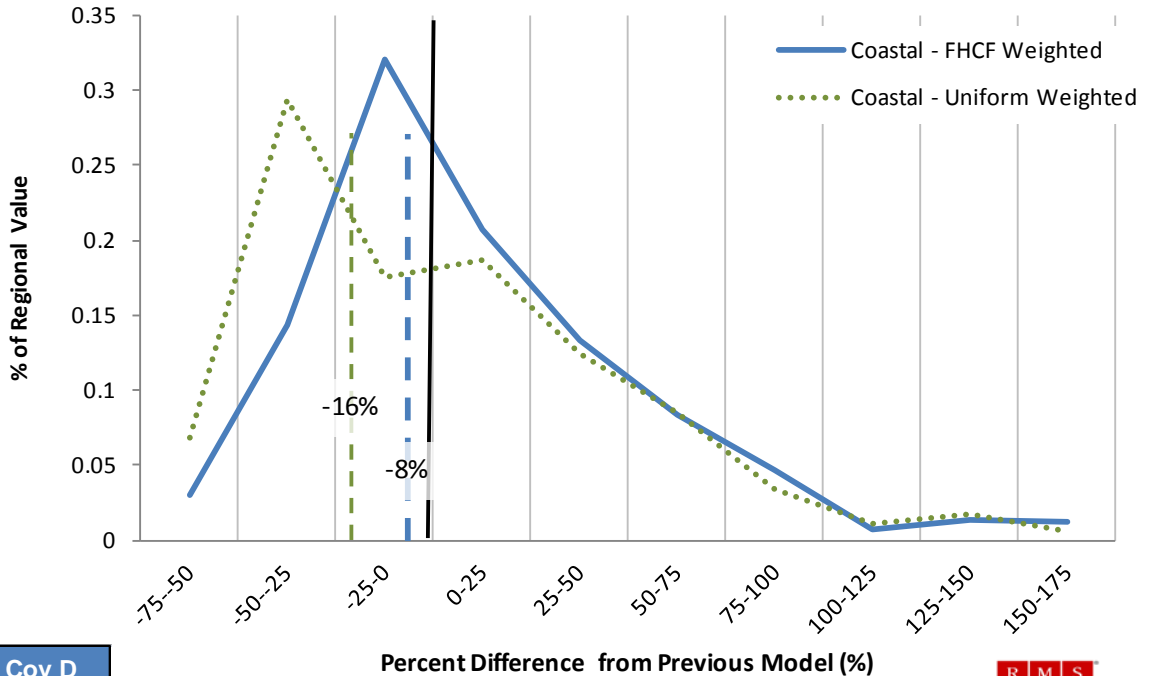
Region	Cov A	Cov B	Cov C	Cov D
<b>ROA09 Form A7: Masonry Owners</b>				
A7-09 Coastal	8.00%	3.53%	-18.21%	-15.33%
A7-09 Inland	202.94%	197.79%	166.38%	355.01%
<b>Uniform weight of LC in Grid B</b>				
A8-11 Coastal	-15.99%	-15.98%	-42.73%	-43.42%
A8-11 Inland	82.37%	82.41%	44.78%	137.07%
<b>FHCF Weighting of Loss Costs in Grid B</b>				
Coastal	-8.23%	-8.23%	-34.97%	-39.58%
Inland	180.05%	180.14%	137.02%	314.21%

Applying FHCF weighting on Grid B points makes results approximate last years form.

# Effect of FHCF weighting

## Masonry Owners distribution results – Coastal

- Chart to left shows of Distribution of Change in model for Coverage A calculated using Grid B points with FHCF weighting vs. uniform weighting.
- Last years form includes secondary modifier attributes which prevents getting an exact match.



Region	Cov A	Cov B	Cov C	Cov D
<b>ROA09 Form A7: Masonry Owners</b>				
Coastal	8.00%	3.53%	-18.21%	-15.33%
Inland	202.94%	197.79%	166.38%	355.01%
<b>Uniform weight of LC in Grid B</b>				
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Inland	82.37%	82.41%	44.78%	137.07%
<b>FHCF Weighting of Loss Costs in Grid B</b>				
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A7-09

A8-11

Applying FHCF weighting on Grid B points makes results approximate last years form.



# Limitations

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- The difference between the percentage change in coverage by region in ROA09-Form A7 will be different than equivalent in ROA11-Form A8 unless:
  - Exposure weighting associated with FHCF data used in ROA09 Form A7