



CLUSTERING FOR CLARITY: A DATA DRIVEN ERA FOR INSURANCE

Precisely



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THE TEAM



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PANAMA CITY COSTAL RISK OVERVIEW

**STORM
SURGE**

FLOODS

HURRICANES
Helene, Milton
2024

PAYOUTS

\$5.2
BILLION

CLAIMS

436,167

CLOSED

27.7%

WITHOUT PAYMENT

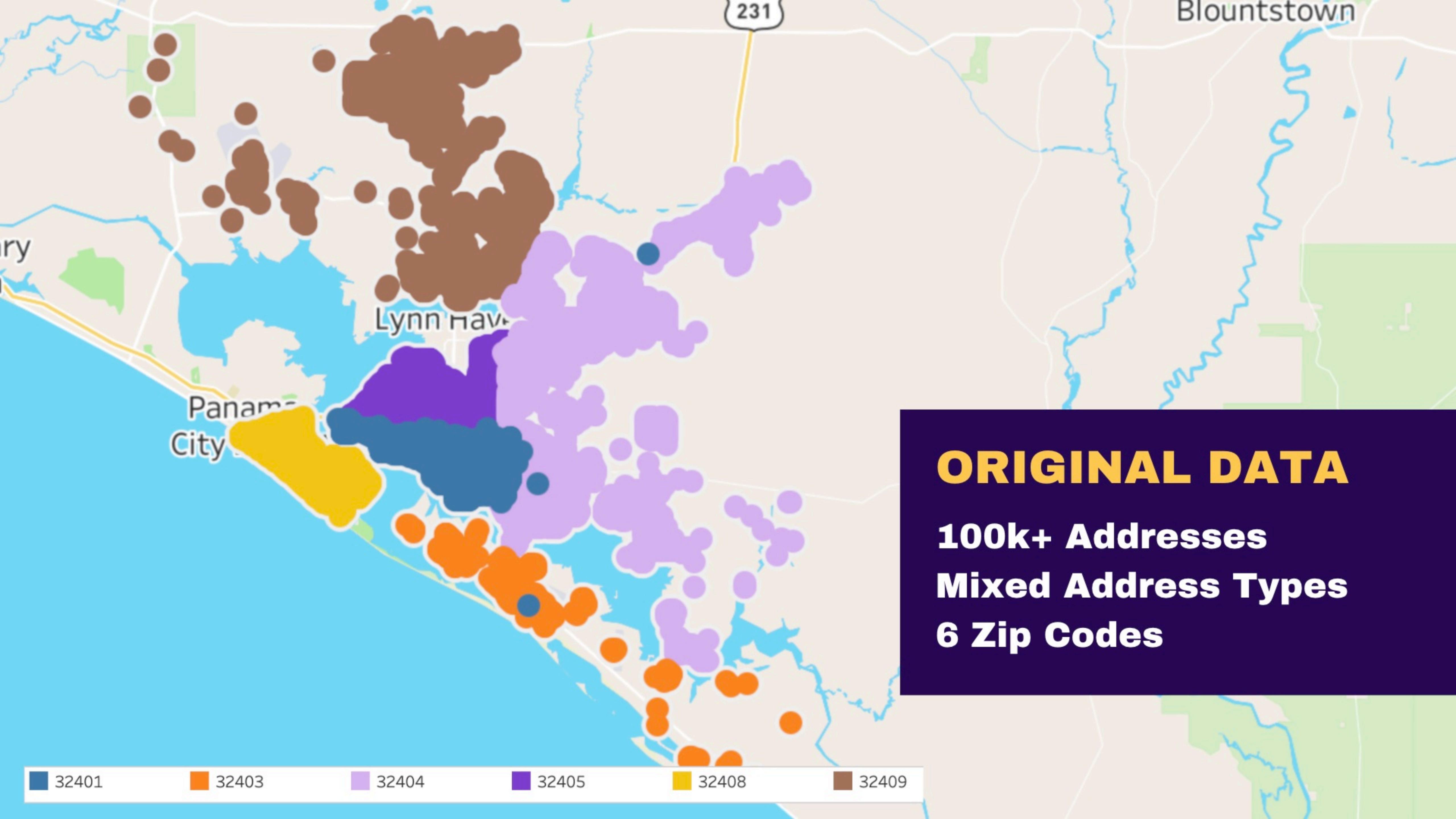
Source: Florida Office of Insurance Regulation



Hurricane Helene, image obtained from the New York Times



Hurricane Milton, image obtained from the ABC News

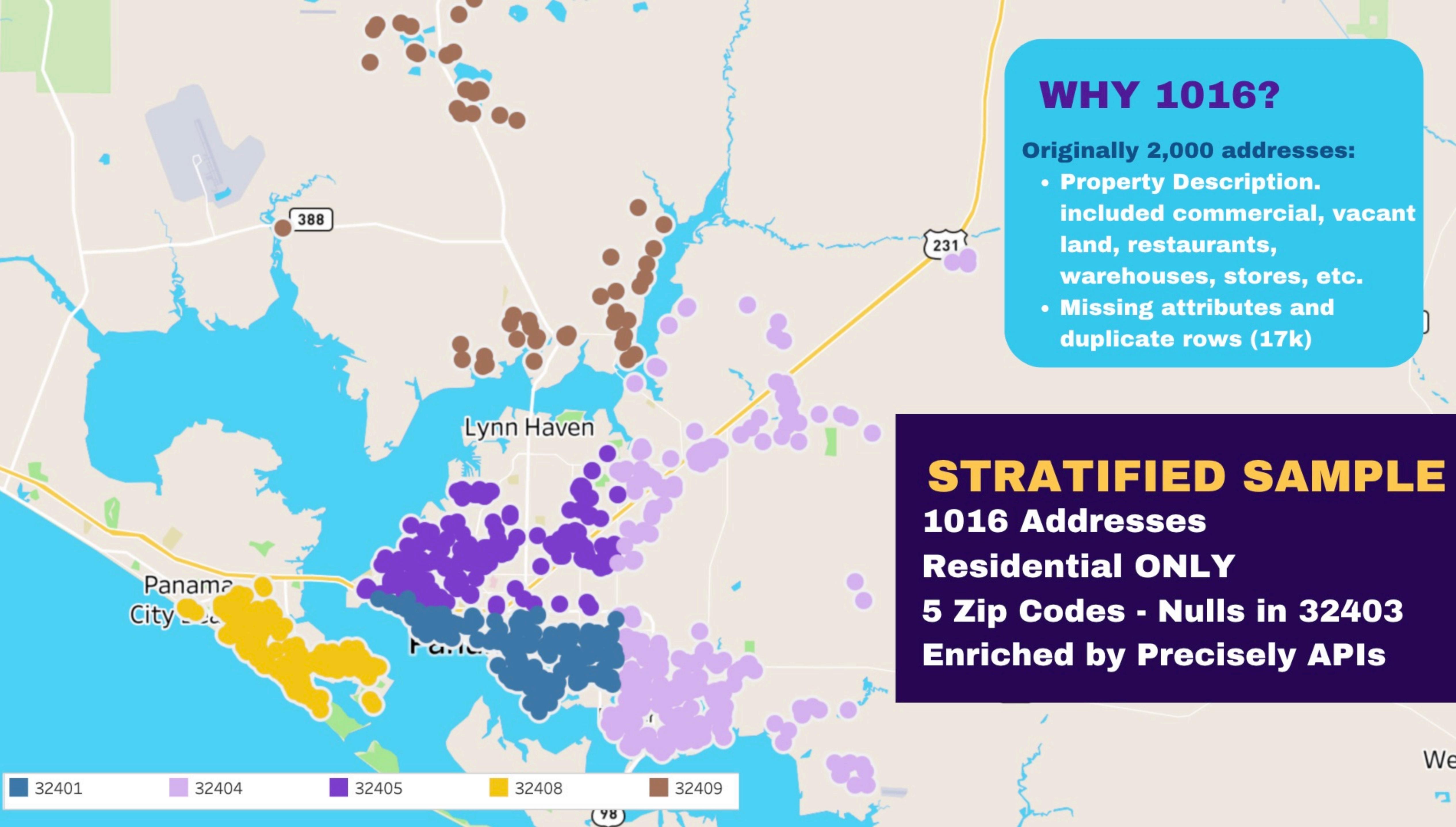


WHY 1016?

Originally 2,000 addresses:

- Property Description included commercial, vacant land, restaurants, warehouses, stores, etc.
- Missing attributes and duplicate rows (17k)

STRATIFIED SAMPLE
1016 Addresses
Residential ONLY
5 Zip Codes - Nulls in 32403
Enriched by Precisely APIs



IDENTIFYING CLUSTER ATTRIBUTES

USING LINEAR REGRESSION

25

ATTRIBUTES USED
ENRICHED PIF DATA

INCLUDED:

Property Attributes, Flood Zones, Adult Age Group, Property Tenure, Deductible, Market Value, Year built, PSYTESegment Code Value, Building SQft, etc.

SIGNIFICANT ATTRIBUTES*

PSYTESegment Code: Segments ranking neighborhoods into 12 lifestyle groups (Precisely PSYTE™ US)

Distance to Nearest Coast: in feet

Retired Age Group: population is 65 or older.

Above Middle Age Group: population is 50 or older and does not fall into other categories.

*Statistical significance based on p value <0.05

IDENTIFYING CLUSTER ATTRIBUTES

USING LINEAR REGRESSION

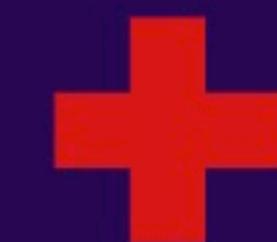
SIGNIFICANT ATTRIBUTES

PSYTESegment Code
Distance to Nearest Coast

Retired Age Group

Above Middle Age Group

EFFECT ON PREMIUM



POSITIVE EFFECT -> HIGHER PREMIUM
NEGATIVE EFFECT -> LOWER PREMIUM

RISK CLUSTERING MODEL

Coastal Risk - Distance from coast (Ft)

COASTAL

<10K

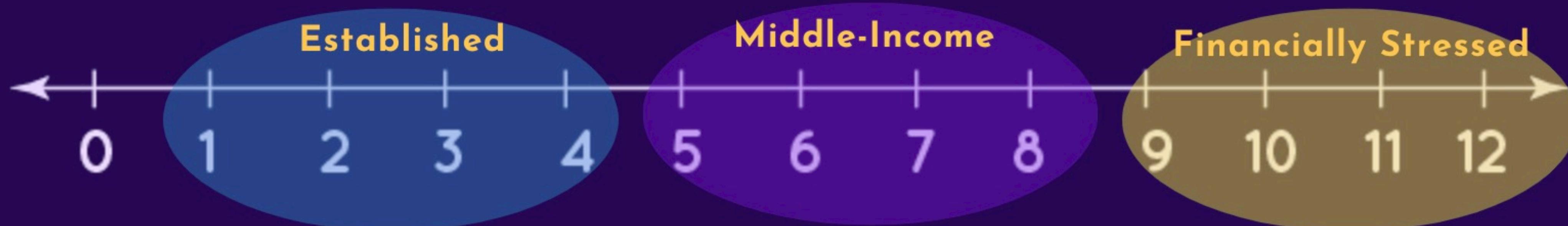
MAINLAND

10k < x < 30k

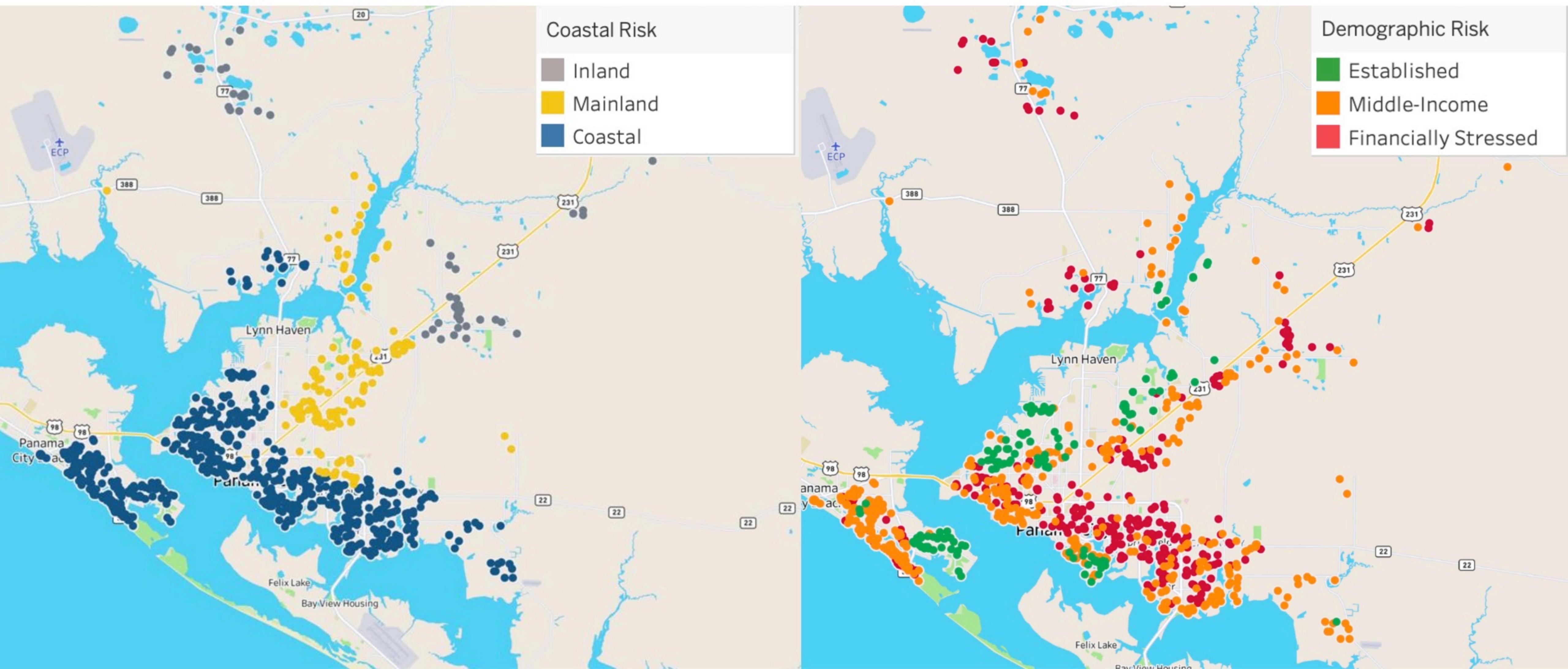
INLAND

>30k

Demographic Category - PSYTE Segment

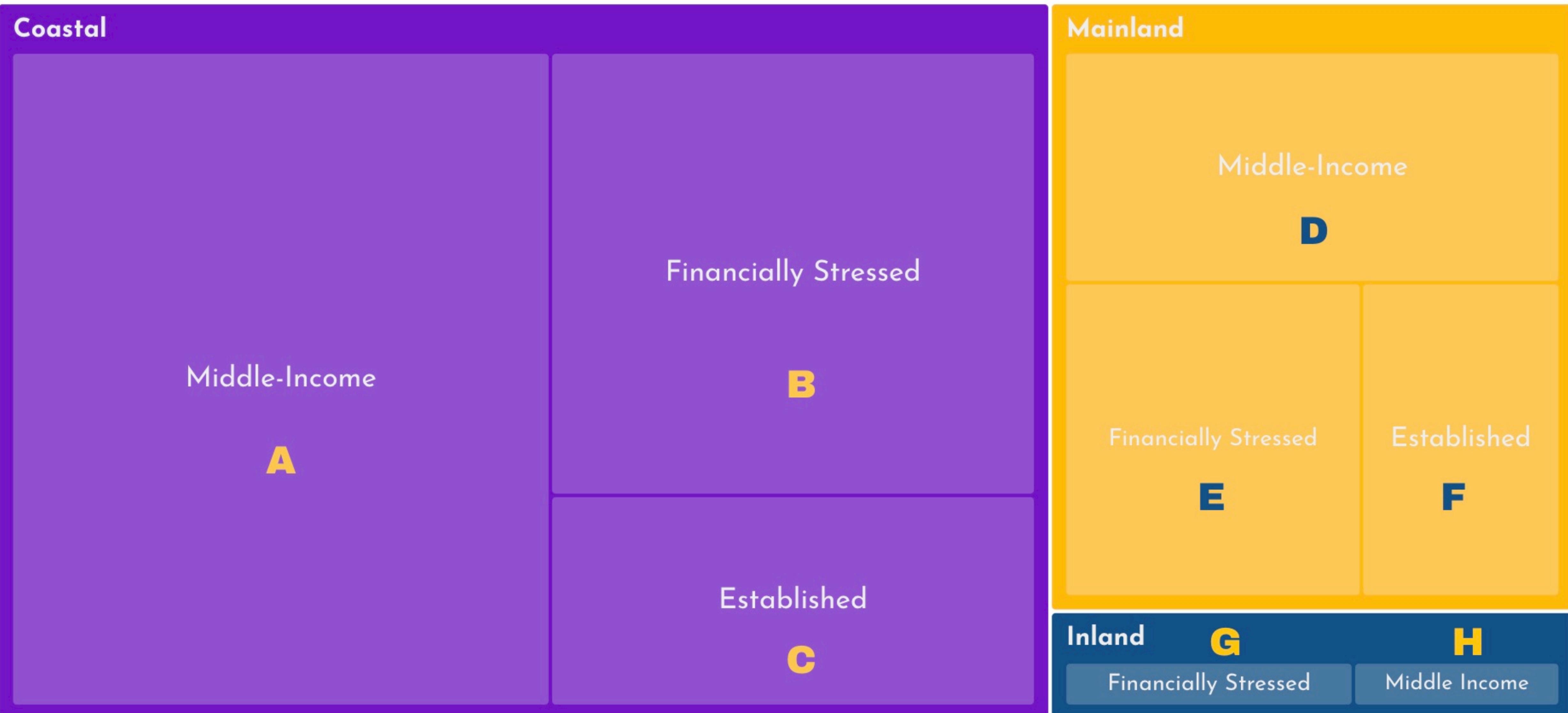


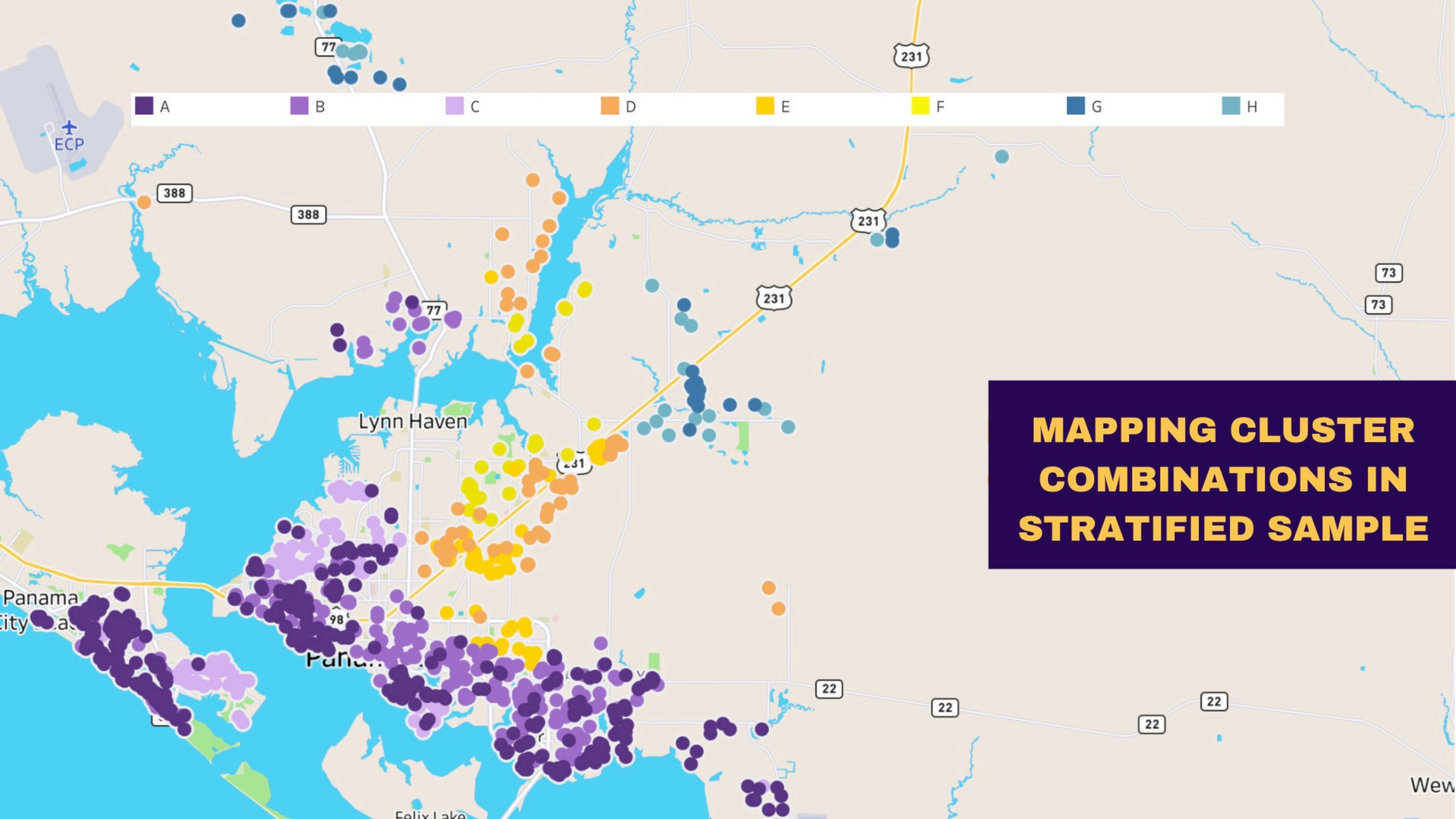
VISUALIZING COASTAL RISK AND DEMOGRAPHIC CATEGORIES

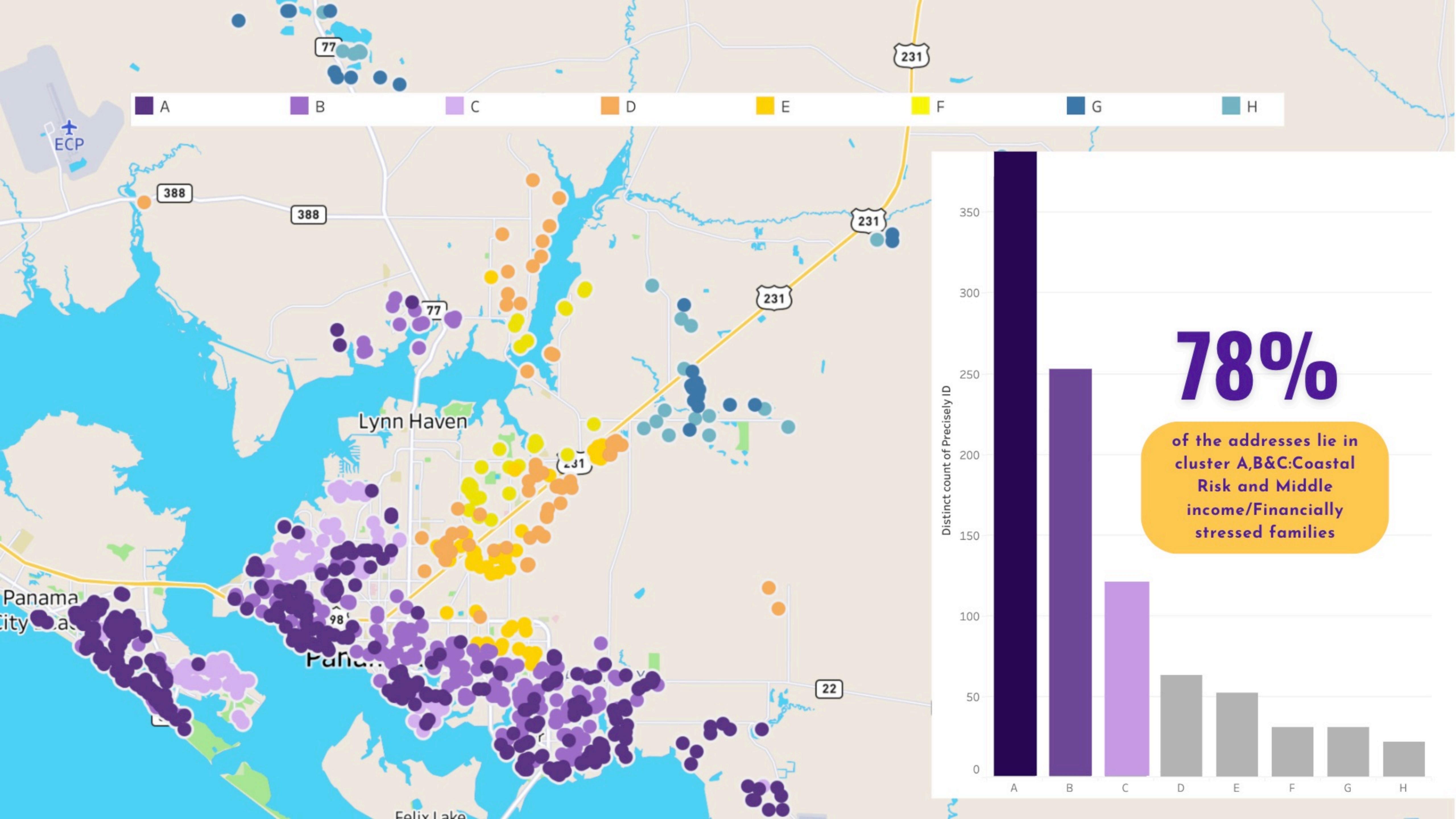


8 CLUSTER COMBINATIONS

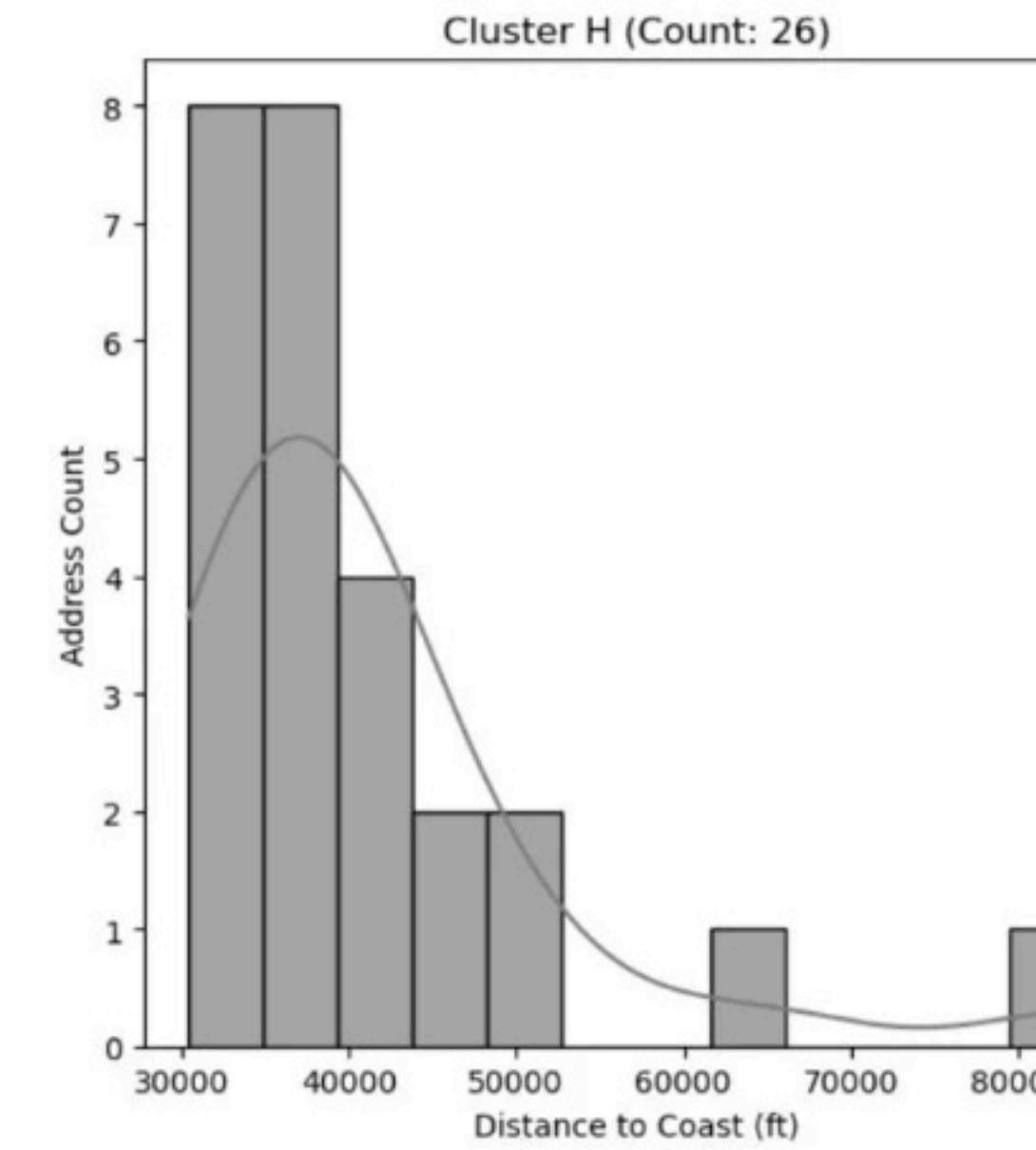
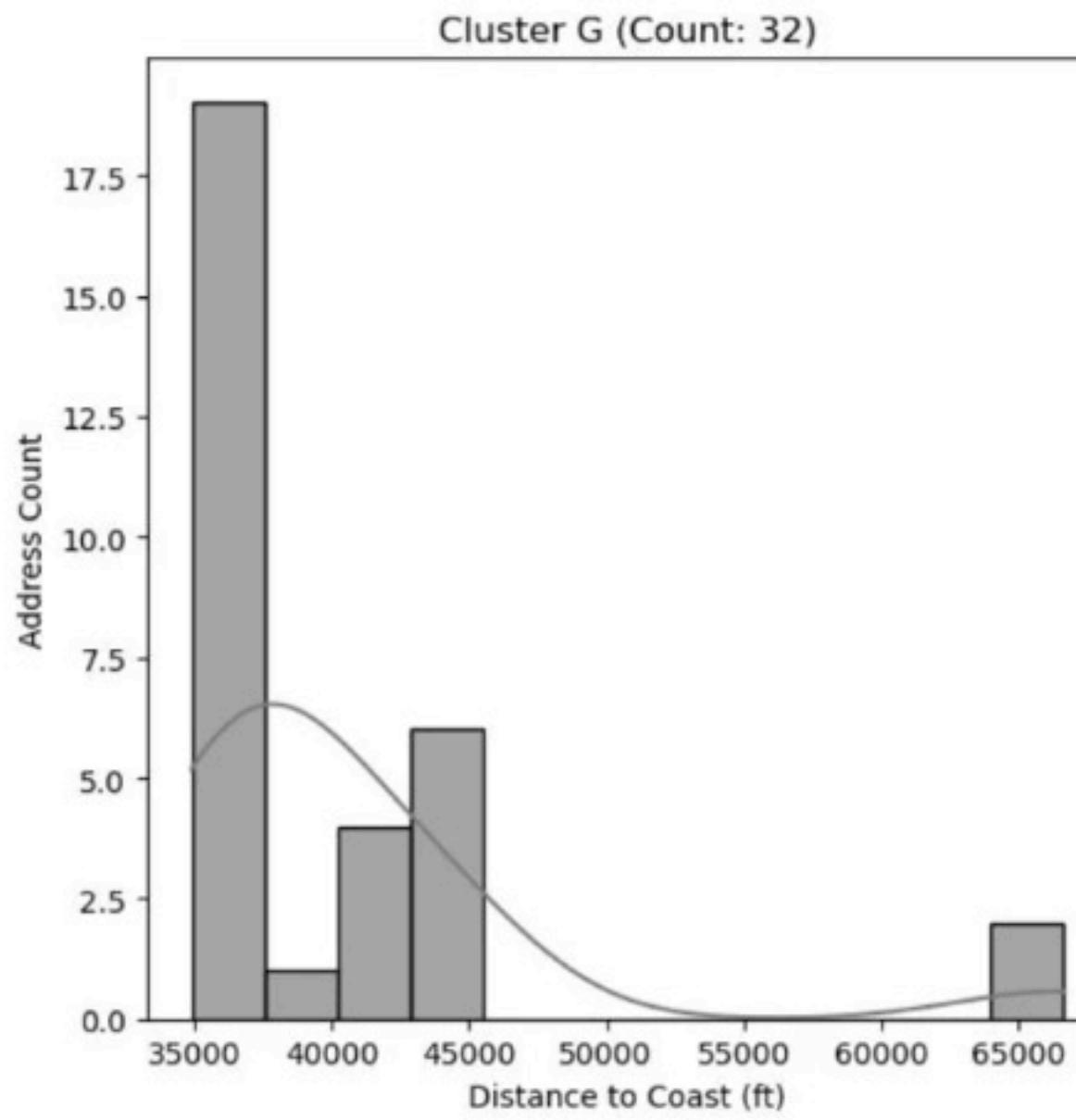
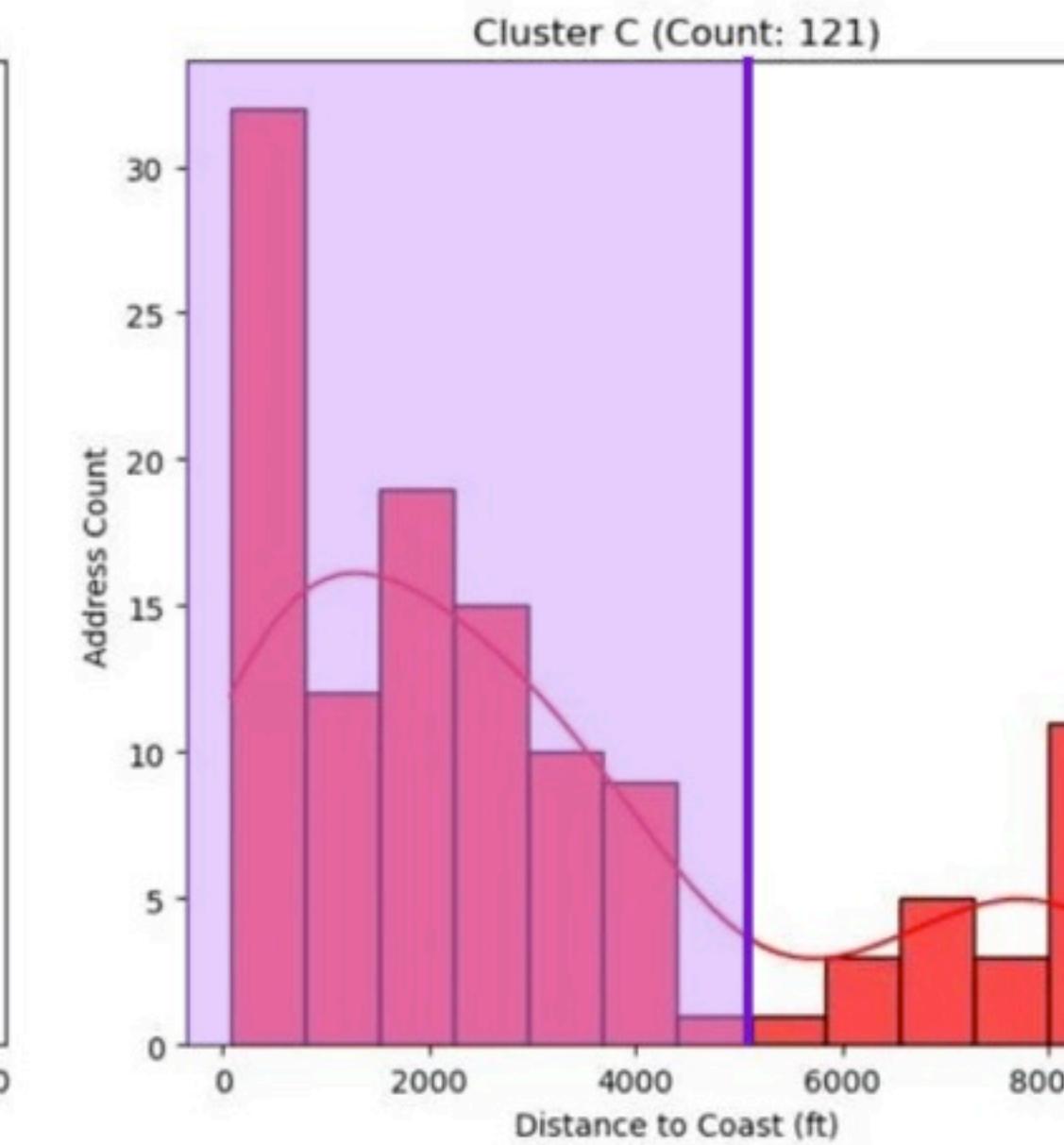
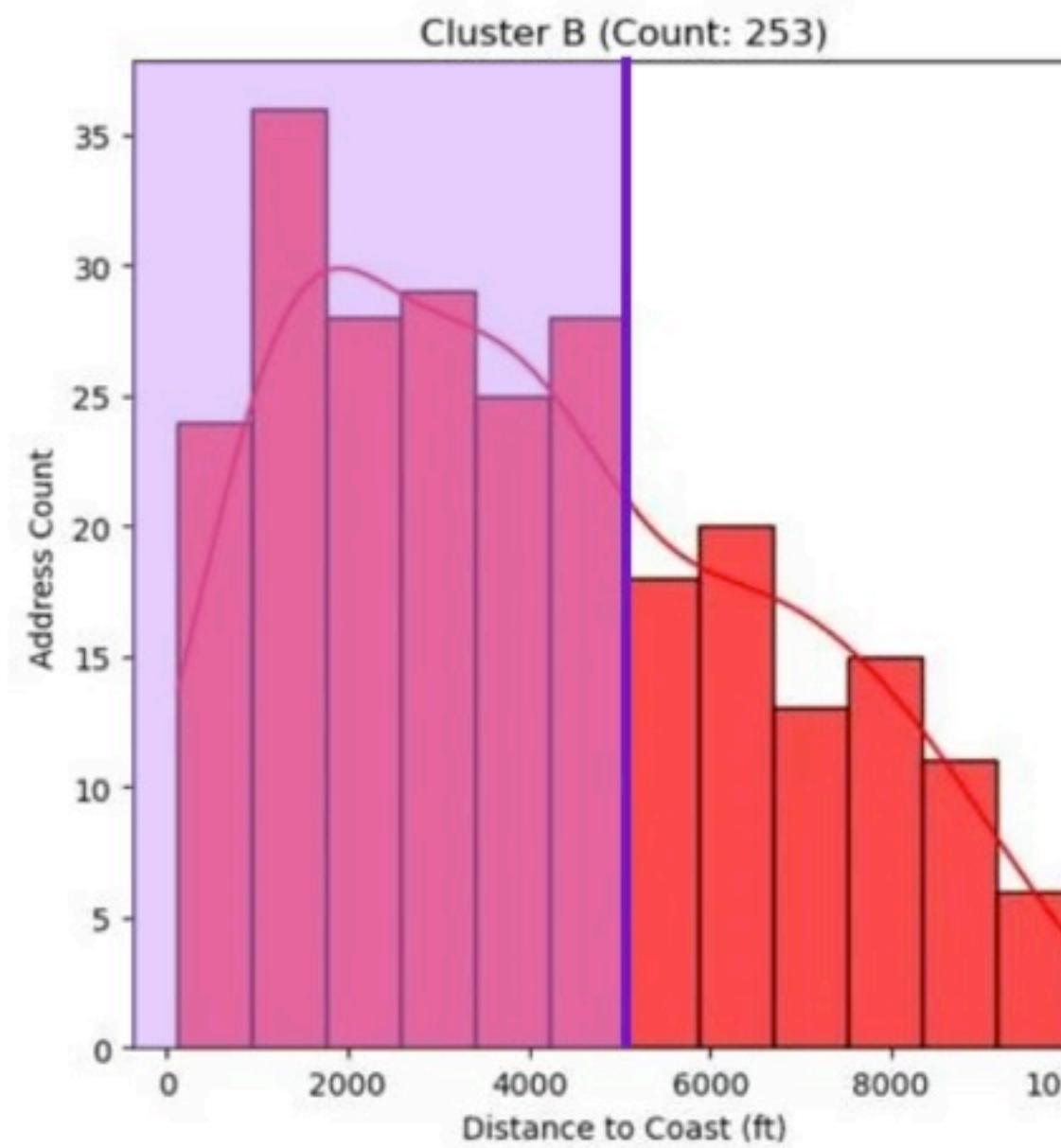
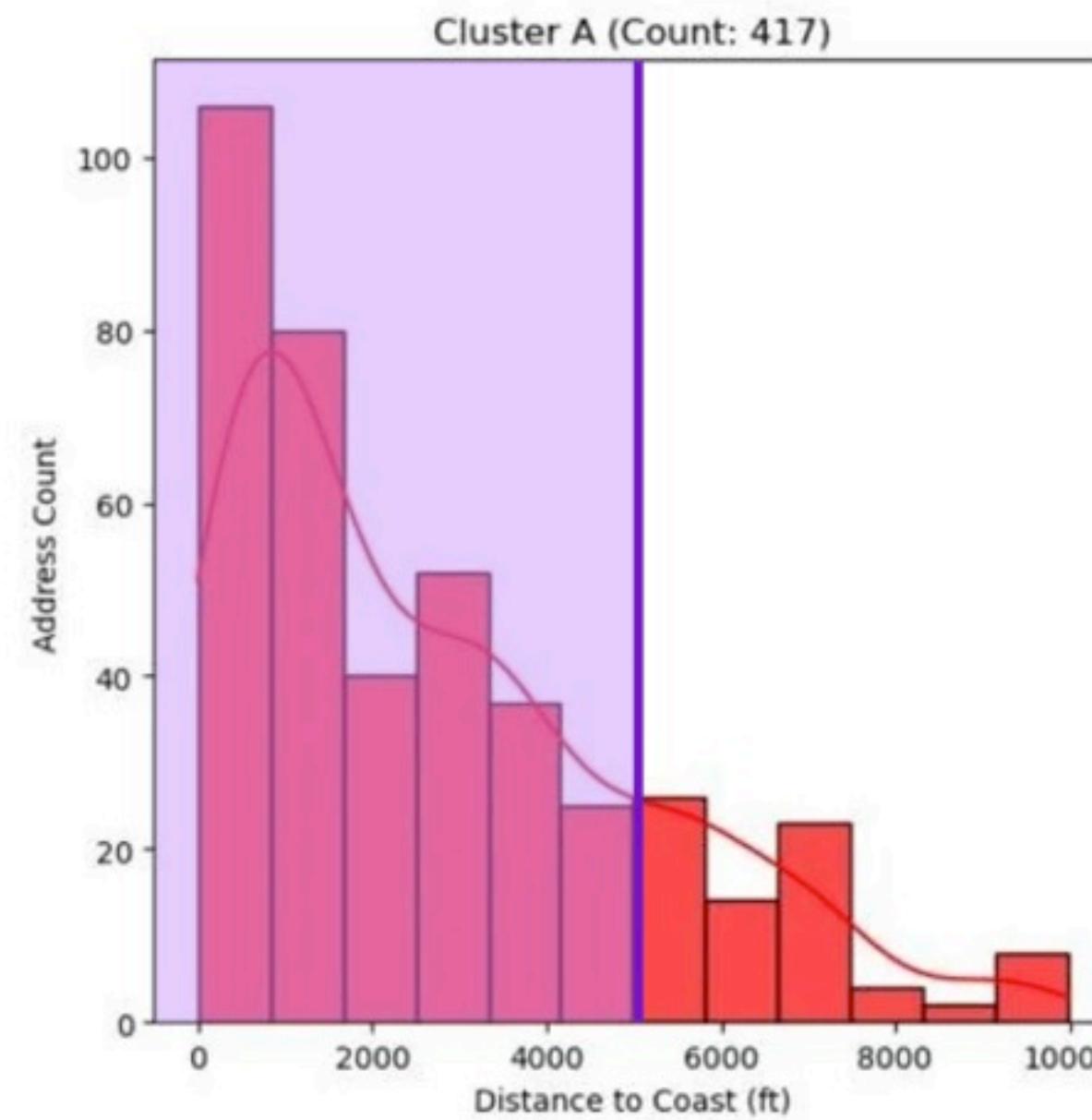
Using K-Modes to cluster by Coastal risk and then Demographic Category





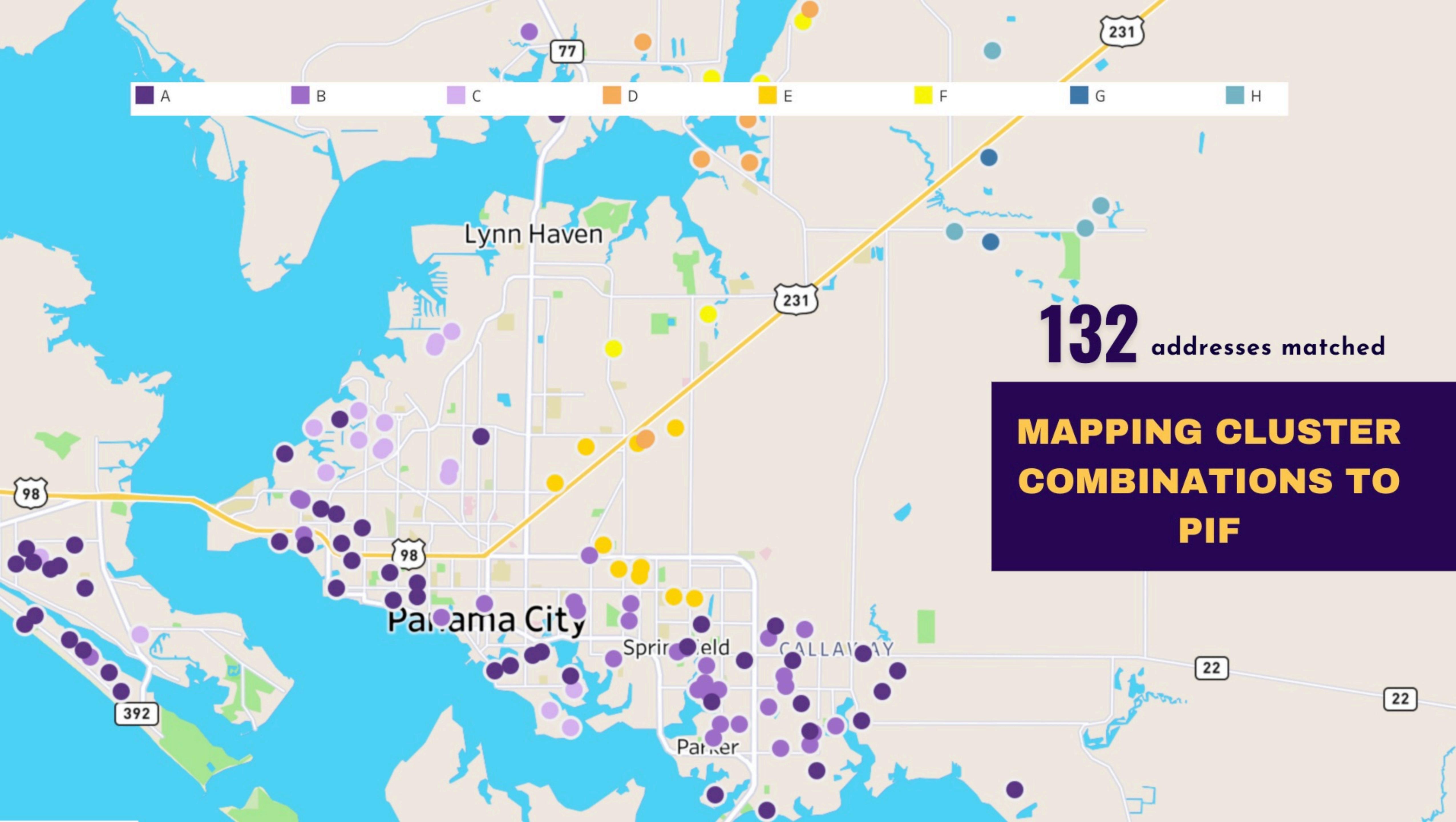


HOW DIFFERENT ARE OUR CLUSTERS?

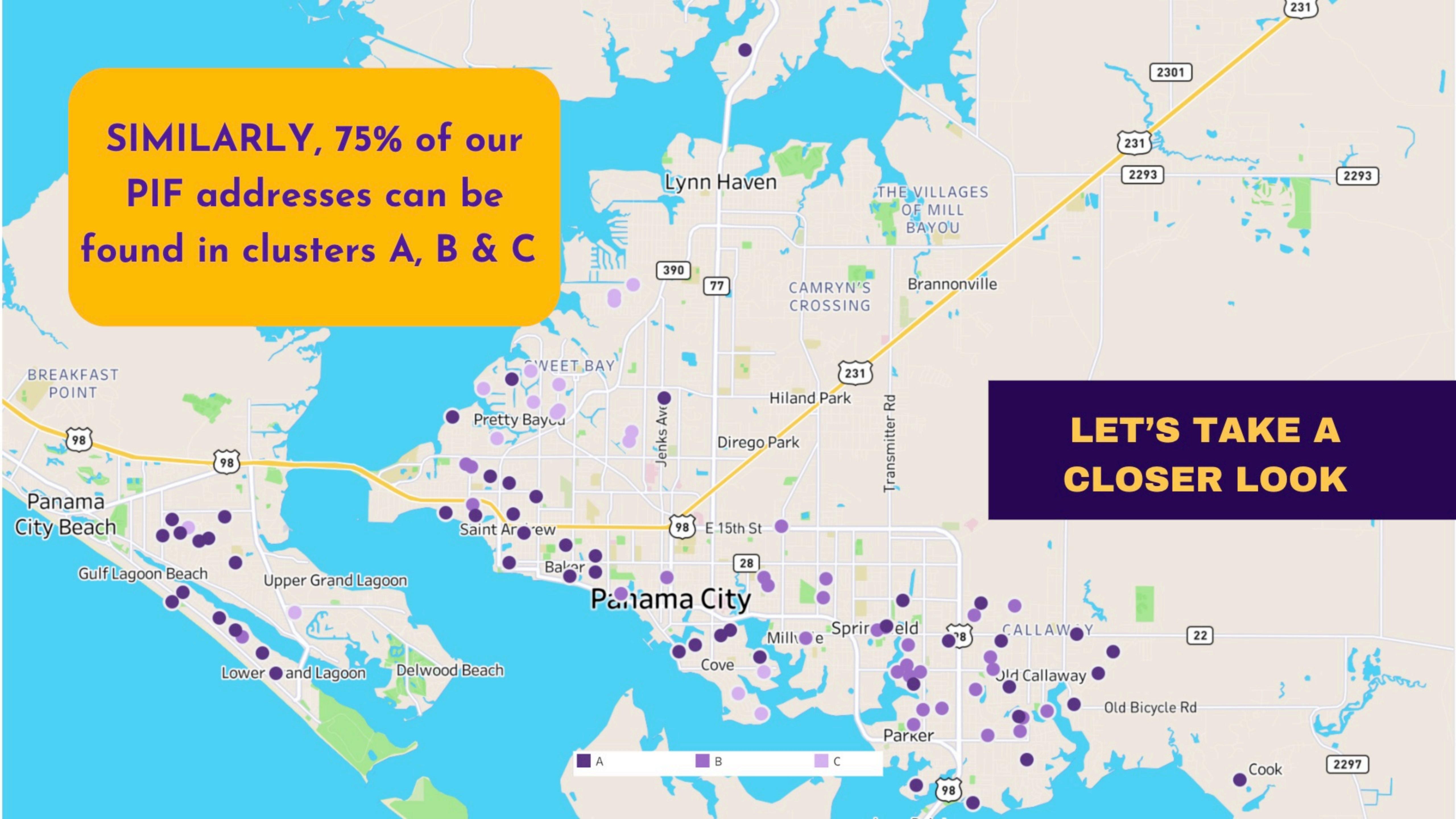


**50K- 80K FT =
5.68 - 10 MILES**

**5K FT = 0.95
MILES**



**SIMILARLY, 75% of our
PIF addresses can be
found in clusters A, B & C**



OPPORTUNITIES:

1. Premium Re-evaluation
2. Policy Value Capping



**ZIP
32405**

FEMA Flood Zone: X

Premium: \$11,231

Established and Thriving

CLUSTER C

FEMA Flood Zone: AE

Premium: \$6,739

Middle Income

CLUSTER A

Bayview

Hiland Park

Diego Park

FEMA Flood Zone: X

Premium: \$10,482

Financially Stressed

CLUSTER B

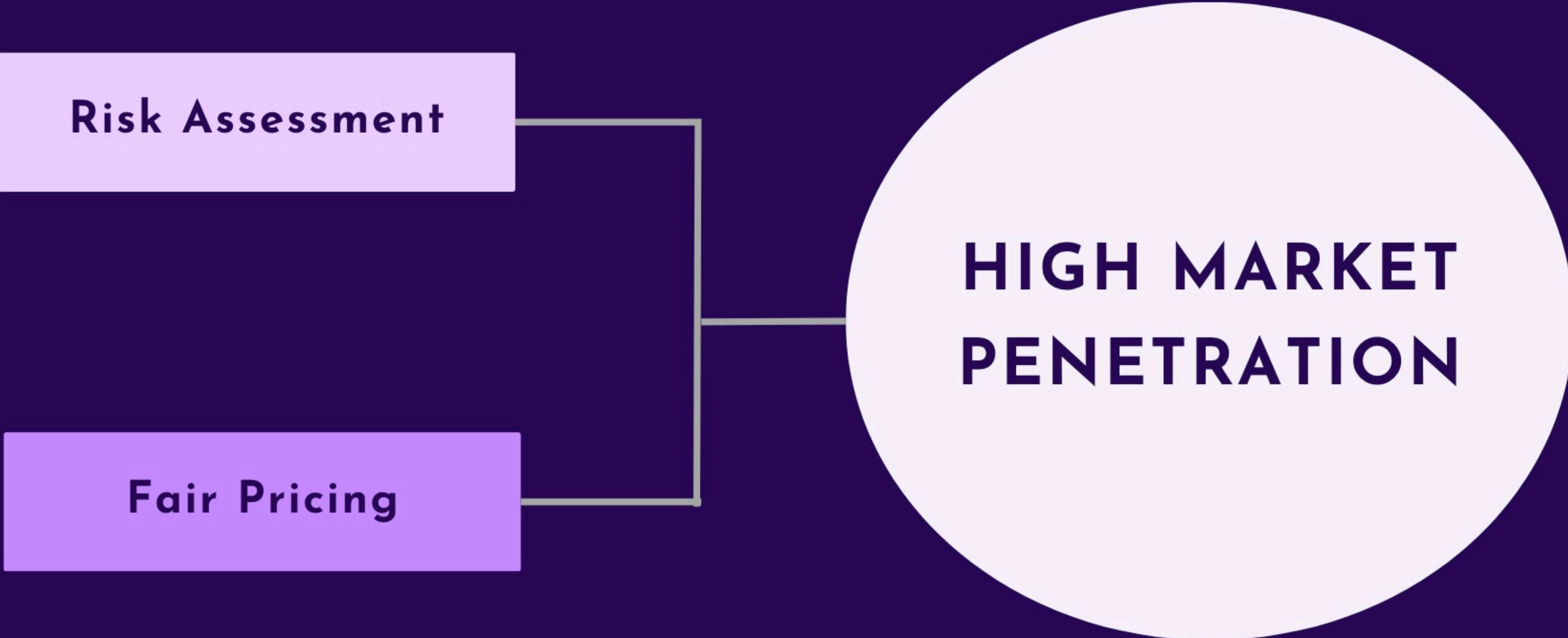
Saint Andr

CLUSTERING

SIMPLIFY RISK - ENSURE FAIRNESS

Risk Assessment

Fair Pricing



HIGH MARKET PENETRATION



CLOSE enough is not
GOOD enough!

We're Open for Questions

precisely

