



Those Maddening Approximate A Zones

Case Studies and Proposed Holistic Solutions

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ASFPM 2019 Annual Conference

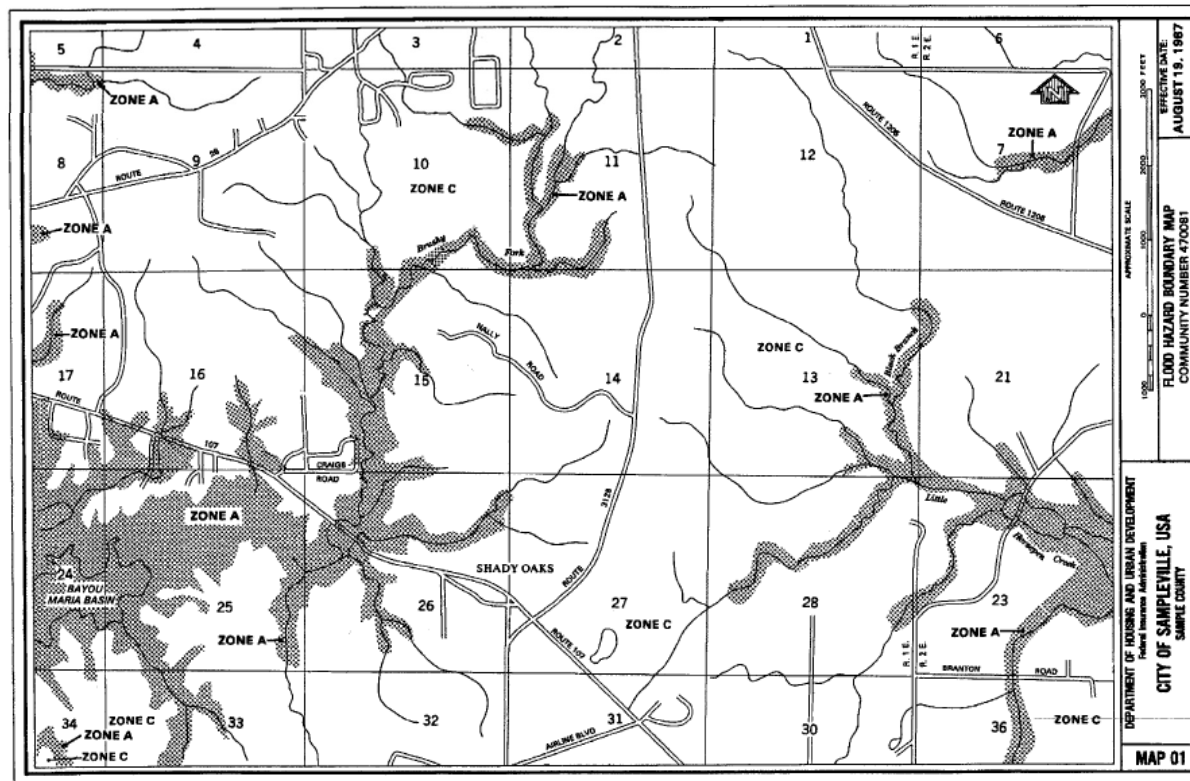
Cleveland, Ohio

May 23; Track NFIP B: Session J8



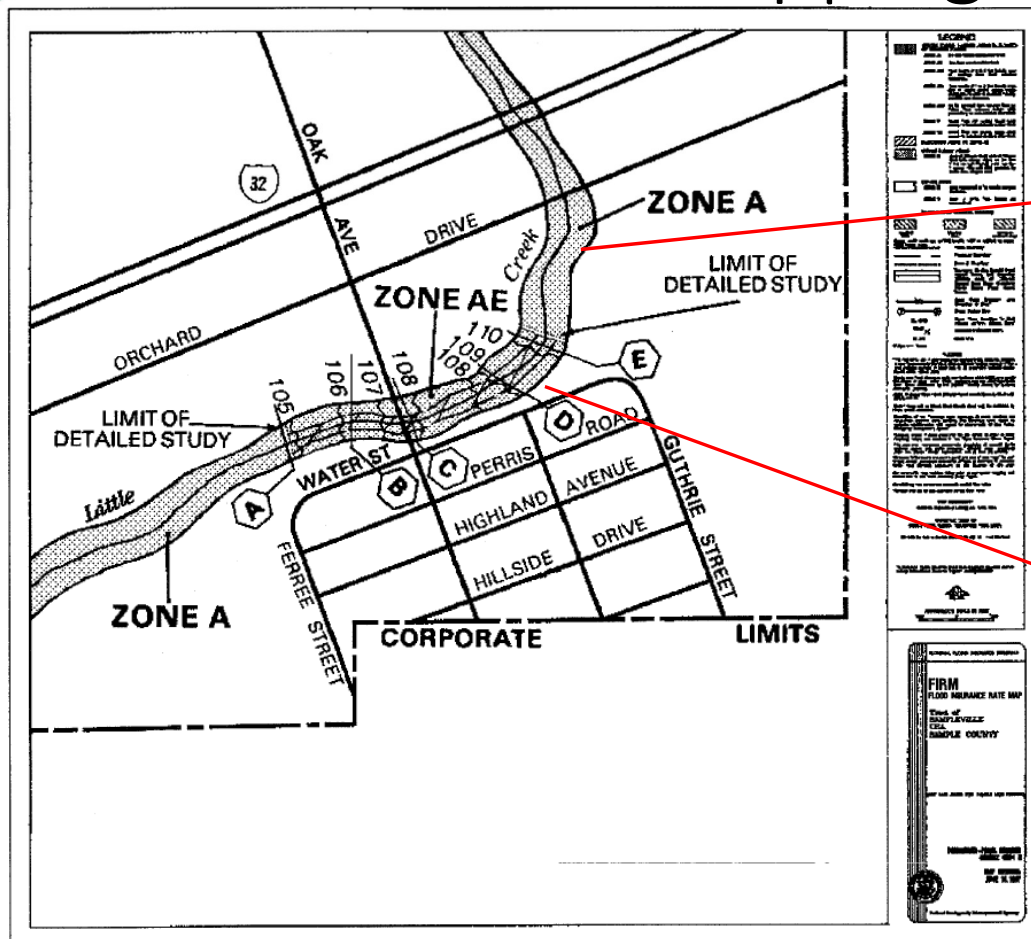
NFIP 101

- National Flood Insurance Program (NFIP) begins in 1968
- Requires community to “join” NFIP
- Makes flood insurance available (largely unavailable in US since 1929)
- In return communities are required to regulate construction in mapped floodplains
- Originally all zones were approximate A zones (Flood Hazard Boundary Maps)
- FEMA begins converting maps to Flood Insurance Rate Maps (FIRMs) with detailed studies (initially numbered A zones, later AE zones)
 - engages in large-scale engineering studies for floodplain mapping
 - first “wave” in 1970s





Detailed Mapping Begins

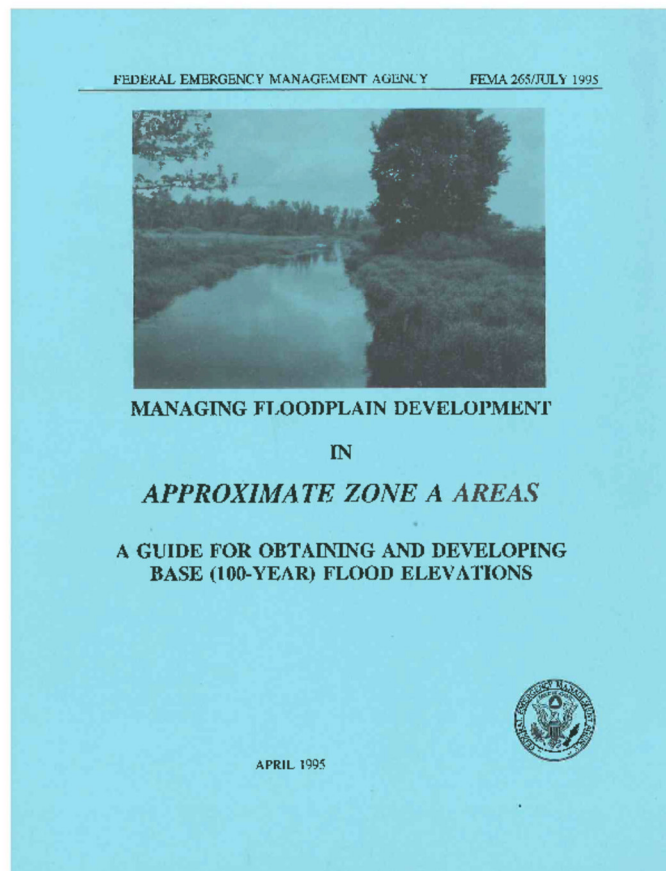


Approximate Flood Study – areas that COULD be developed

Detailed Flood Study – developed areas



A Matter of Funding ...



“Due to the cost of developing detailed flood risk data, areas not subject to development pressure are studied using approximate methodologies and continue to be shown on the FIRM as approximate Zone A areas.”



Fast Forward to Today

Many NJ A Zones in Populated Areas



Essex County



Burlington County



Fast Forward to Today

Many NJ A Zones in Populated Areas



Burlington County

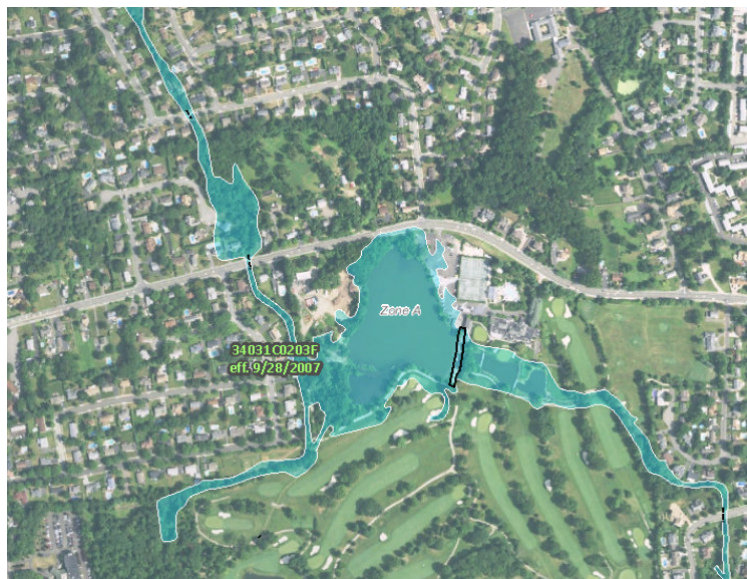


Burlington County



Fast Forward to Today

Many NJ A Zones in Populated Areas (continued)



Passaic County



Camden County



Problems with Approximate A Zones

- Higher flood insurance premiums
- Since no BFE, Elevation Certificate not very useful
- Site-specific BFE study required to apply for LOMA
- Individual homeowners frustrated, confused, angry
- Not intended for populated areas!!



... More

- Frequently small drainage areas (< 1 square mile)
- Many are outdated but are not restudied with new mapping
 - Low priority?
- Possibly modeling performed to obtain permit
 - but no LOMR filed after development constructed



Case Study #1

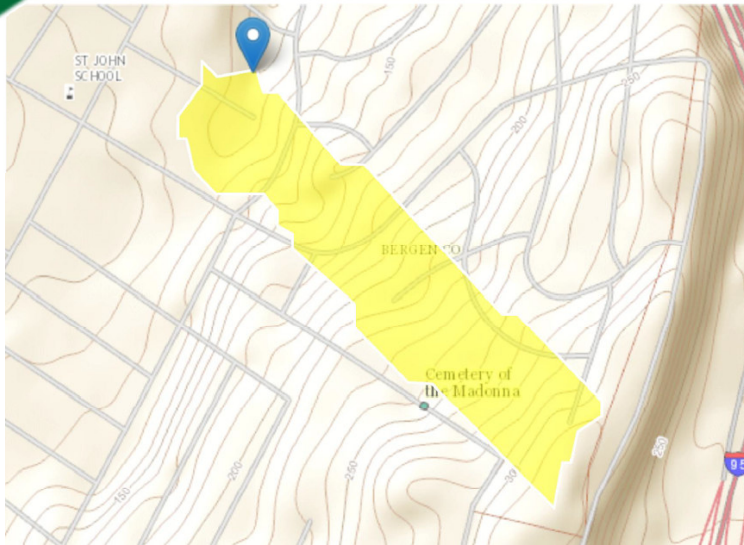
Leonía (Bergen County)



- Homeowner calls surveyor for Elevation Certificate
- Surveyor requests advice on BFE



StreamStats



DRNAREA	Area that drains to a point on a stream	0.035	square miles = 22 acres
POPdens	Basin Population Density	4960	persons per square mile
100 Year Peak Flood		104	ft ³ /s

LARGER QUESTIONS:

1. WHY ARE WE MAPPING 22 ACRE WATERSHEDS?
2. IF POP DENSITY IS 5000 PERSONS/SQUARE MILE, SHOULDN'T STUDY BE DETAILED?
3. SHOULD THERE BE A DRAINAGE AREA THRESHOLD FOR FLOOD MAPPING?
4. SHOULD THERE BE A POPULATION DENSITY THRESHOLD FOR CONVERTING TO DETAILED STUDY?



HISTORY



First Map issued 1982



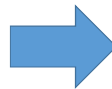
Next Map issued 1995



TODAY

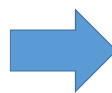


Preliminary Map corrects problem with
“Limited Detail Study”



But Does It?

- Cannot use for LOMA; FEMA only uses EFFECTIVE MAPS for determination!!
- Bergen County prelims currently being appealed; will not be resolved until NYC appeal is resolved
- Need “discussion” with FEMA LOMA review staff



After Considerable Dialogue with LOMA Review Team

- FEMA-funded Limited Detail accepted for establishing BFE
- 2 LOMAs issued in this area



- Homeowners needed to hire an engineer as well as a surveyor to navigate this process



Case Study #2

Ridgewood, NJ (Bergen County)

- Approximate A Zone is upstream of detailed study
- Why terminate study at that location?
- Drainage Area = 1.0 mi²
- Population Density = 4460 persons / mi²
- Cost of BFE study ~ \$1,500
- Eventual LOMA removal

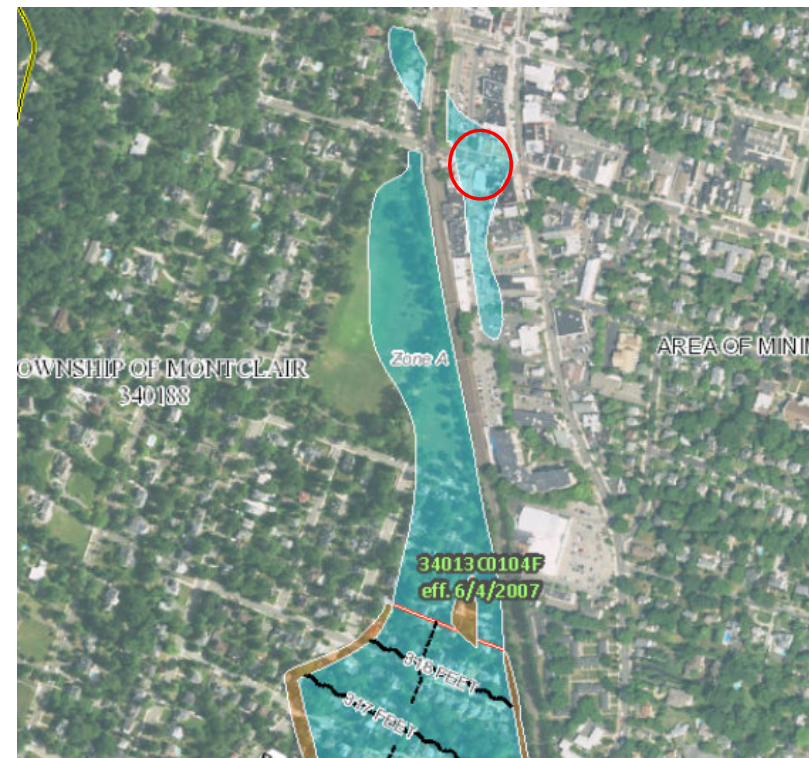




Case Study #3

Montclair, NJ (Essex County)

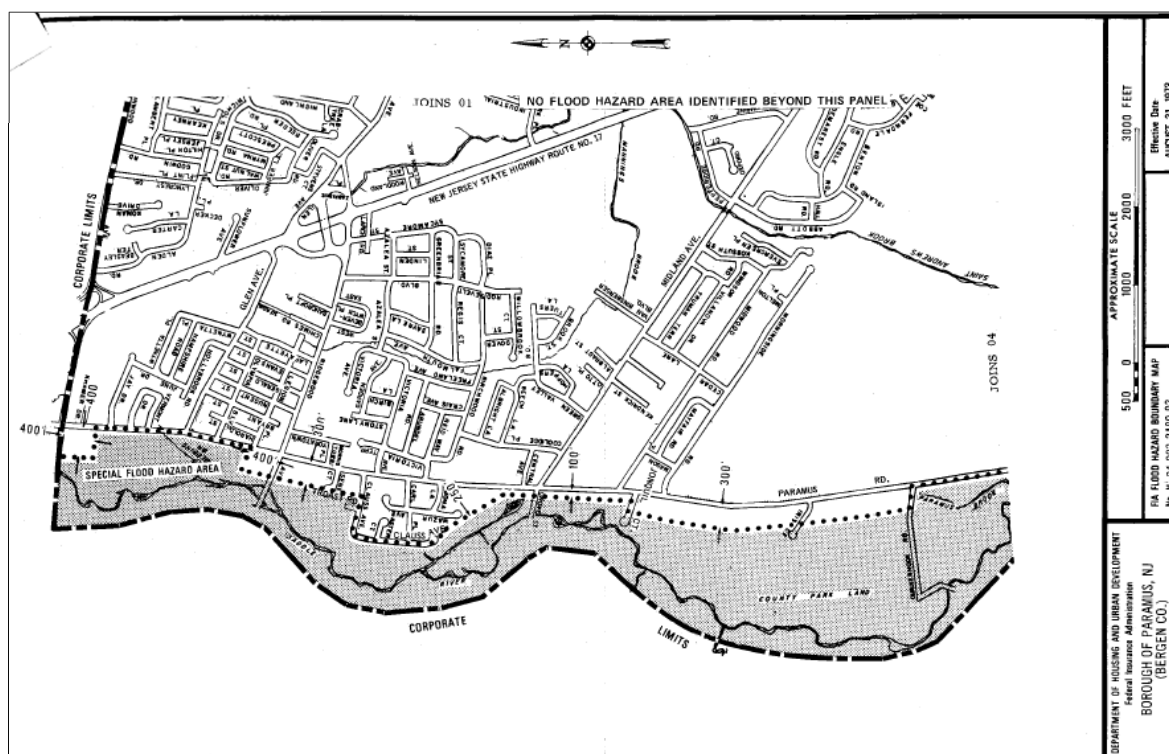
- Commercial Property near NJ Transit Station
- Potential Buyer quoted \$8k annual flood insurance premium
- Drainage Area = 0.14 mi² (90 ac)
- Pop. Dens. = 4000 pers/ mi²
- BFE study cost increased by culverts to be surveyed
- Interest in Property dissipated





Source of Approximate A Zones

- Memory of municipal engineer of past flooding
- Existing drainage study – MAYBE
- USGS Flood Hazard Atlas quads (early 1960s) Chicago metro area
- “By Guess and By Golly”
- Little or no documentation in FEMA archives





“Model-Backed” A Zones

- New A zones are result of models
 - FLO-2D (no structures, no field survey)
 - HEC-RAS w/ GIS cut lines (no structures, no field survey)
- Cannot put BFE on map, but part of GIS layer
- Still of little use to average homeowner
 - Homeowner without GIS knowledge cannot access BFE for LOMA application
 - Not factored into insurance premium determination
 - Some create new issues
 - Burlington County new panel 252F (issued 12/2017) new FLO-2D Zone A



11 LOMAs since Feb 2018 !!



Proposed Solution

- Convert to AE via LOMR
- Prioritize based on population density
- Adopt drainage area threshold
 - FEMA – no threshold exists currently
 - Suggestions:
 - 0.25 mi² (urban)
 - 0.50 mi² (rural)
 - Upstream of threshold, convert to shaded zone X
- Perform Pilot Study to Establish Criteria for Statewide / Regional Approach
- Work in Partnership with State Coordinator / FEMA Regional Office



Don't Recreate the Wheel

- Leverage prior studies
- Development in floodplain is regulated:
 - Large development in approximate A zone should have required h&h
 - States / regions with regulations may have h&h also
- Developers have engineers perform h&h, mapping analyses to obtain permit
- After permit issued, communities should require LOMR
 - Community Responsibility (44 CFR 65.3)
- States should consider updating model ordinance
 - State more clearly that LOMR is required after development is constructed which modifies floodplain
- Community should make it part of developer's responsibility



Montgomery Township, NJ

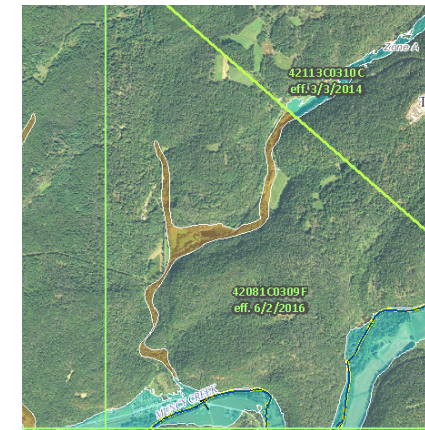
- Somerset County preliminary maps (2005 ish)
- Montgomery Township: “unacceptable Approximate A zone mapping”
- NJDEP Stream Encroachment permit files used to refine Zone A
- Worked closely with FEMA mapping contractor
- End Result – More acceptable A zone mapping





Other Large-Scale Approximate A Zone Re-Mapping Efforts

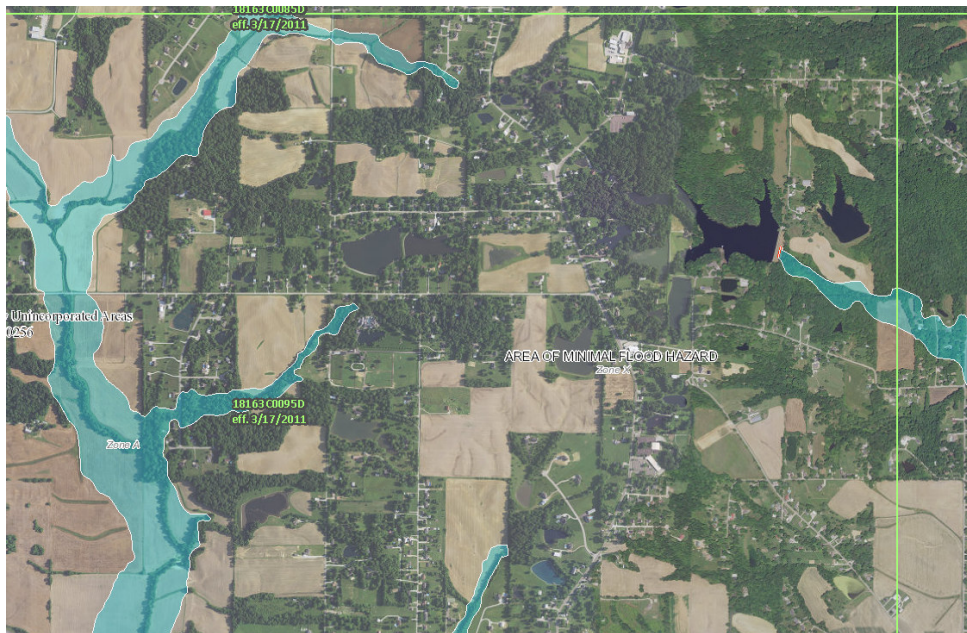
- Lycoming County, PA
 - County-wide conversion of approximate A to shaded zone X upstream of DA threshold





Other Large-Scale Approximate A Zone Re-Mapping Efforts

- Vanderburgh County, IN
 - Truncate approximate A upstream of DA threshold of $\frac{1}{4}$ acre





CRS Communities

Earn Points for Converting A to AE

- Credit Worthy under 400 Mapping and Regulations
- Activity 410 Flood Hazard Mapping
- New Study (NS) Points
- Up to 270 points

Credit Points for NS

NS = as shown in the following table, based on the study scope and the original FIRM zone, not to exceed the maximum of 350 points for this element

Study Scope	Original FIRM Zone		
	B, C, D, or X	A or V	AE, VE, A#
1. Delineation or redelineation of an approximate A or V Zone	70	60	-
2. a. Flood elevations for a site at time of development	120	95	60
b. Flood elevations and floodway for a site at time of development	160	125	80
3. New profile or length of shoreline, base flood elevations/depths in AH and AO Zones.	260	205	130
4. New profile with floodway, length of shoreline with coastal velocity zone delineation, or converting coastal A Zones to V Zones	350	270	175



Benefits

- Eventual Elimination of Approximate A Zones in populated areas
- Fairer Basis for Insurance Premiums for Property Owners
- More Accurate Maps (for LOMAs, LOMR-Fs)



Questions



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