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# **Relationship between SFWMD ERP Criteria and the National Flood Insurance Program**

**July 25, 2013**

# National Flood Insurance Program Acronyms

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NFIP – National Flood Insurance Program

DHS – Department of Homeland Security

FEMA – Federal Emergency Management Agency

FIS – Flood Insurance Study

FIRM – Flood Insurance Rate Map

SFHA – Special Flood Hazard Area

HHA – High Hazard Area (velocity zones)

BFE – Base Flood Elevations

CRS – Community Rating System

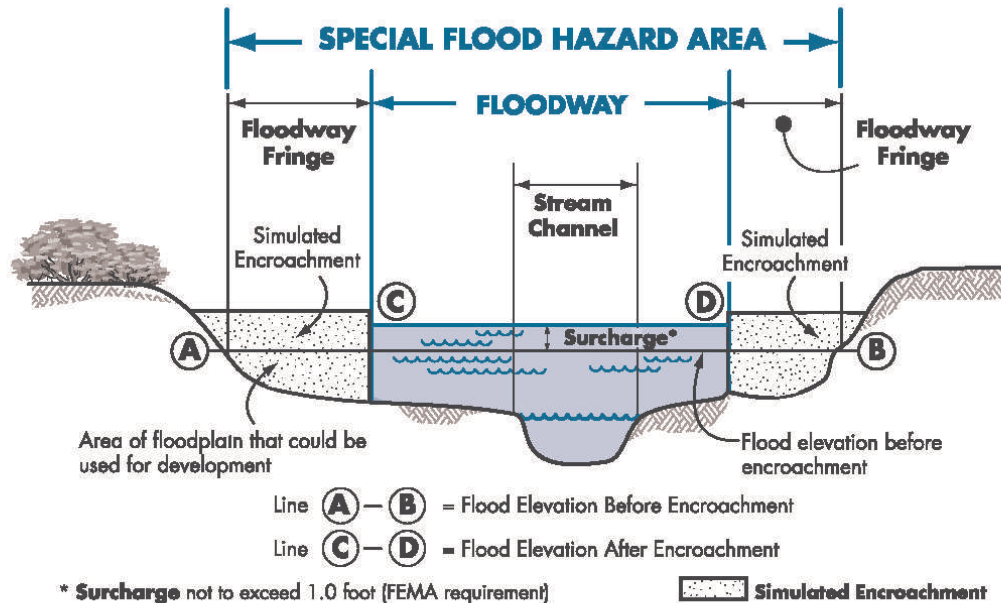
# Mapped Flood Zones and Elevations

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- AH – 1% annual chance shallow flooding
- AE – 1% annual chance
- VE – 1% annual chance, velocity
- X500 – shaded X (flooded by 0.2% event)
- X – unshaded X
- BFE – Base Flood Elevation
- Floodway – necessary to reserve for flow

# Floodway Definitions

## Understanding the Floodway



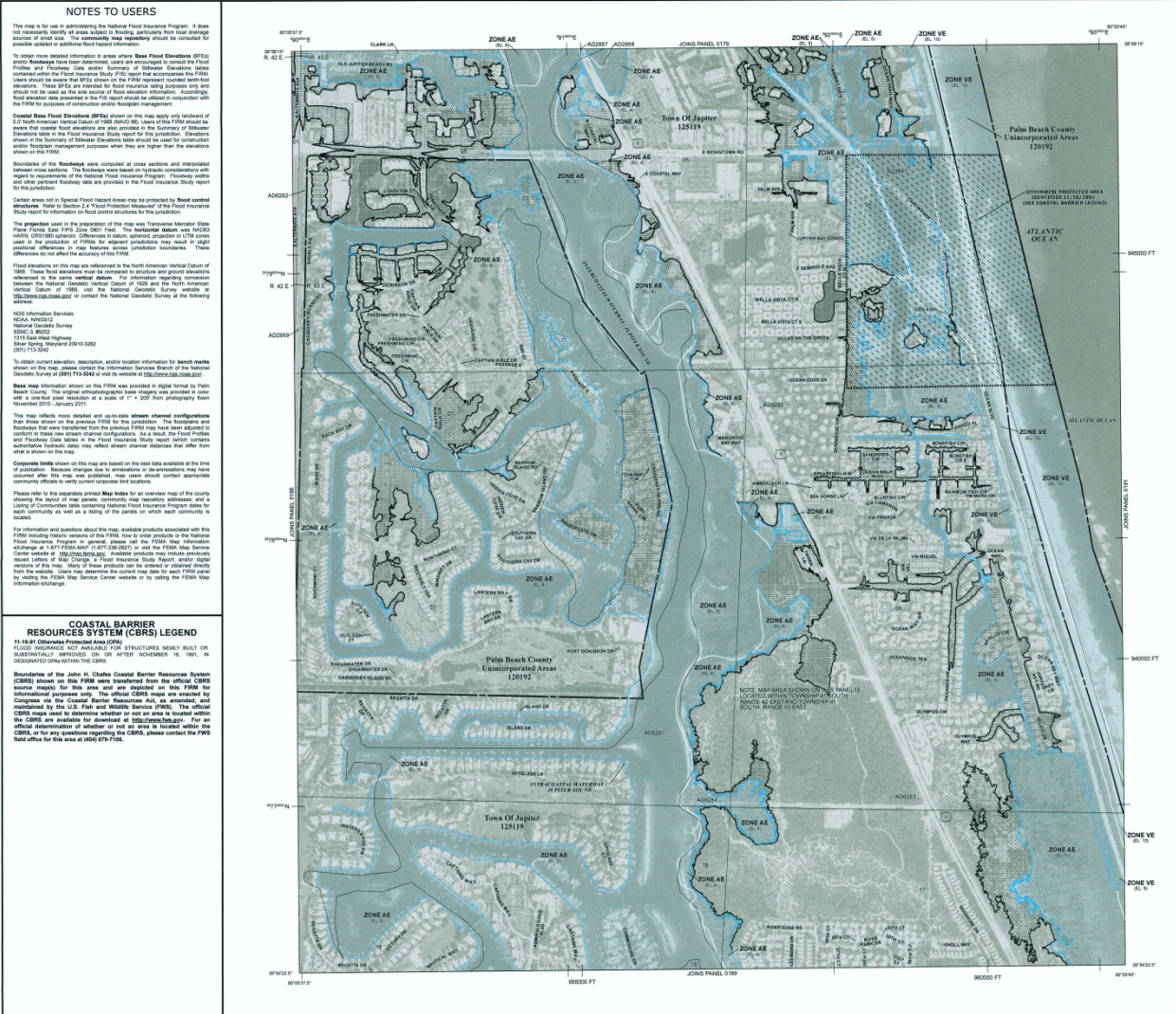
### Terms and Definitions

The **Floodway** is the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to pass the base flood discharge without cumulatively increasing flood elevations.

Computer models of the floodplain are used to simulate “encroachment” or development in the flood fringe in order to predict where and how much the Base Flood Elevation would increase if the floodplain is allowed to be developed.

For any proposed floodway development, the applicant must provide evidence that “no rise” will occur or obtain a Conditional Letter of Map Revision (CLOMR) before a local floodplain permit can be issued ([see page 33](#)). You will need an experienced registered professional engineer to make sure your proposed project either won’t increase flooding or that any increases do not impact structures on other properties.

# Flood Insurance Rate Map (FIRM)



**NOTES TO USERS**

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding. Information for flood damage prevention and flood-resistant design should be obtained from appropriate local, State, and Federal agencies.

**Special Flood Hazard Areas (SFHAs)**

Special Flood Hazard Areas (SFHAs) shown on this map apply only to buildings of 2 to 4 stories above ground level. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Coastal Barrier Resources System (CBRS)**

Coastal Barrier Resources System (CBRS) areas are shown on this map as areas that are subject to flooding. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Other Flood Areas (OFA)**

Other Flood Areas (OFA) are shown on this map as areas that are subject to flooding. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**LEGEND**

**SPECIAL FLOOD HAZARD AREAS SUBJECT TO DURATION BY THE 1% ANNUAL CHANCE FLOOD**

**Zone AE** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone VE** - Coastal Barrier Resources System (CBRS) areas. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone XE** - Other Flood Areas (OFA). Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone XZ** - Other Areas (OA). Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone A** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone B** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone C** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone D** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

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**Zone G** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone H** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone I** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone J** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone K** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone L** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone M** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone N** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone O** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone P** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone Q** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone R** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone S** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone T** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone U** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone V** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone W** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone X** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone Y** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**Zone Z** - Special Flood Hazard Areas (SFHAs) subject to flooding by the 1% annual chance flood. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND**

**Zone VE** - Coastal Barrier Resources System (CBRS) areas. Flood damage prevention and flood-resistant design information is available from local, State, and Federal agencies.

**NATIONAL FLOOD INSURANCE PROGRAM**

**FIRM FLOOD INSURANCE RATE MAP PALM BEACH COUNTY, FLORIDA AND INCORPORATED AREAS**

**PANEL 187 OF 1200**

**DATE: 11-16-81**

**CONTRACT NUMBER: 12099-C-1017**

**EFFECTIVE DATE: 11-16-81**

**Federal Emergency Management Agency**

**MAP SCALE: 1" = 500'**

**MAP NUMBER: 12099-C-1017**

**EFFECTIVE DATE: 11-16-81**



# SFWMD Environmental Resources Permitting

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- Basis of Review found in Environmental Resources Permit Information Manual, Volume IV

## SFWMD SWM/ERP Rainfall Criteria for Onsite Flood Protection

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- Internal Roads (5-year, 24-hour) varies
- Parking Lots (5-year, 24-hour),  
(5-year, 1 hour exfilt trenches)
- Finished Floors (100-year, 3-day w/no discharge or FIRM, whichever higher)

## SFWMD Rainfall Criteria for Offsite Impacts

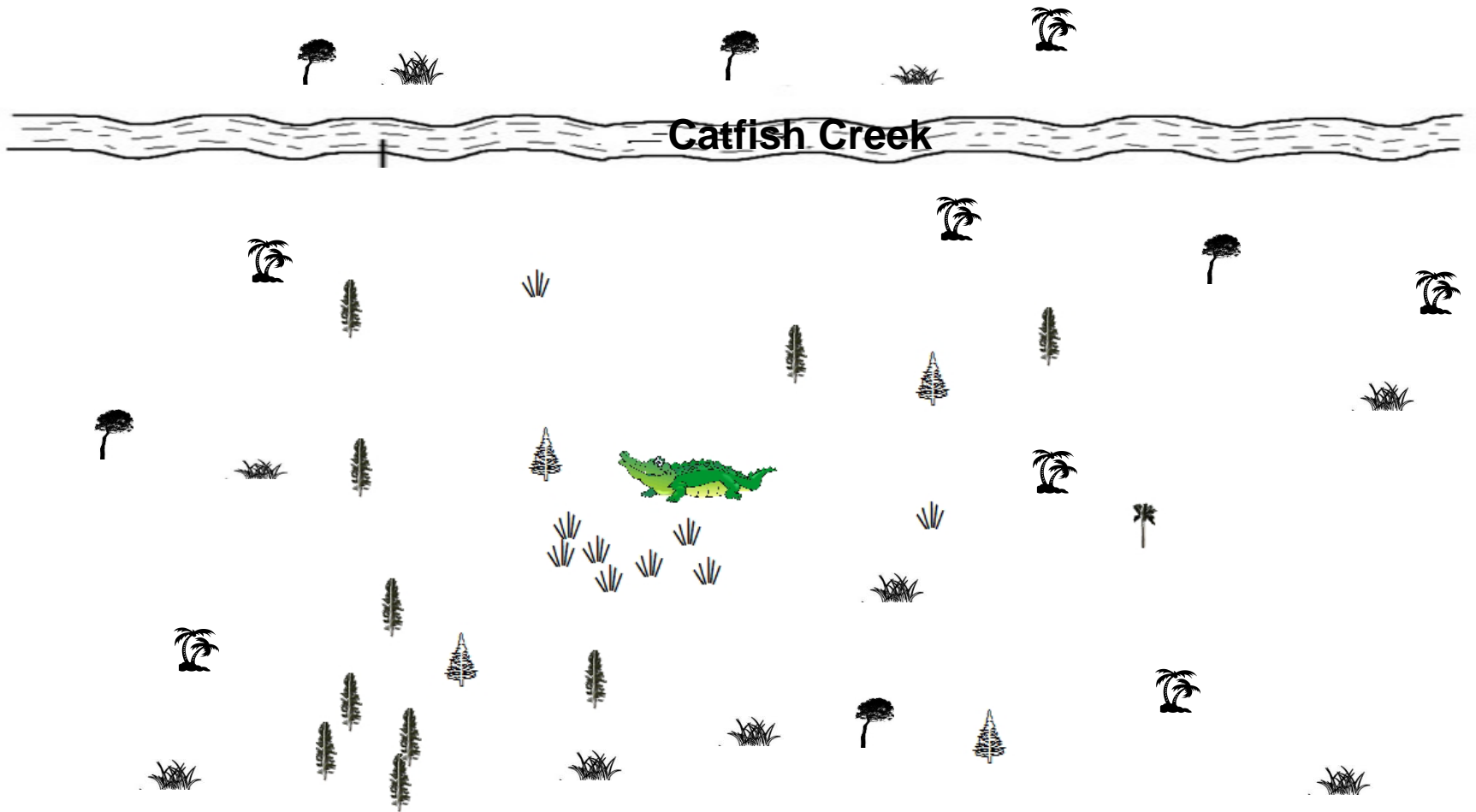
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- Water Quality Detention (2.5 inches X Impervious Area(acres) - or- 1 inch of runoff, which ever greater)
- Floodplain Encroachment (100 year, 3 day)
- Floodway Encroachment (100 year, 3 day)
- Discharge Limitation (25 year, 3 day, Pre-vs Post-Development)

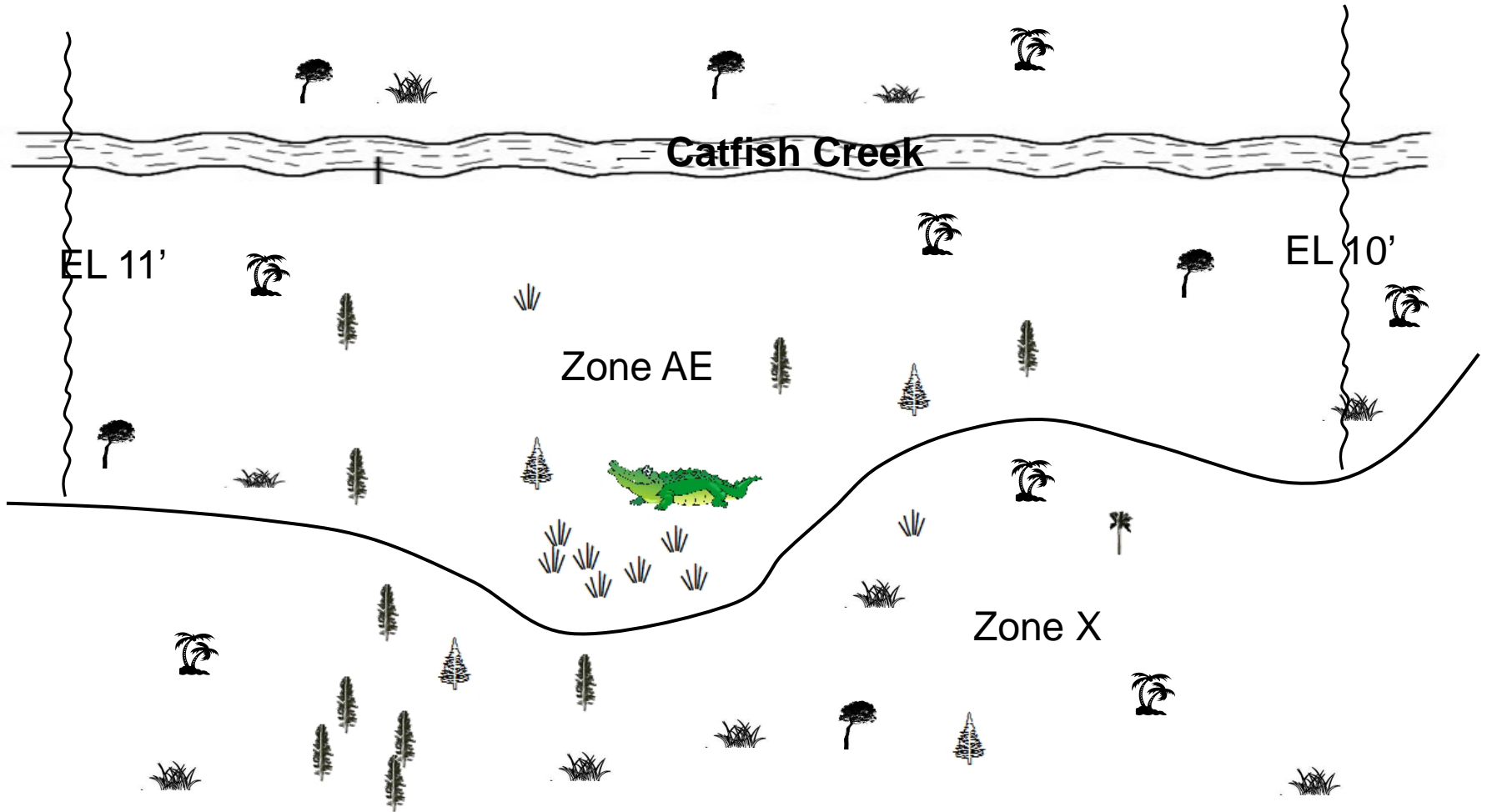


# Catfish Creek

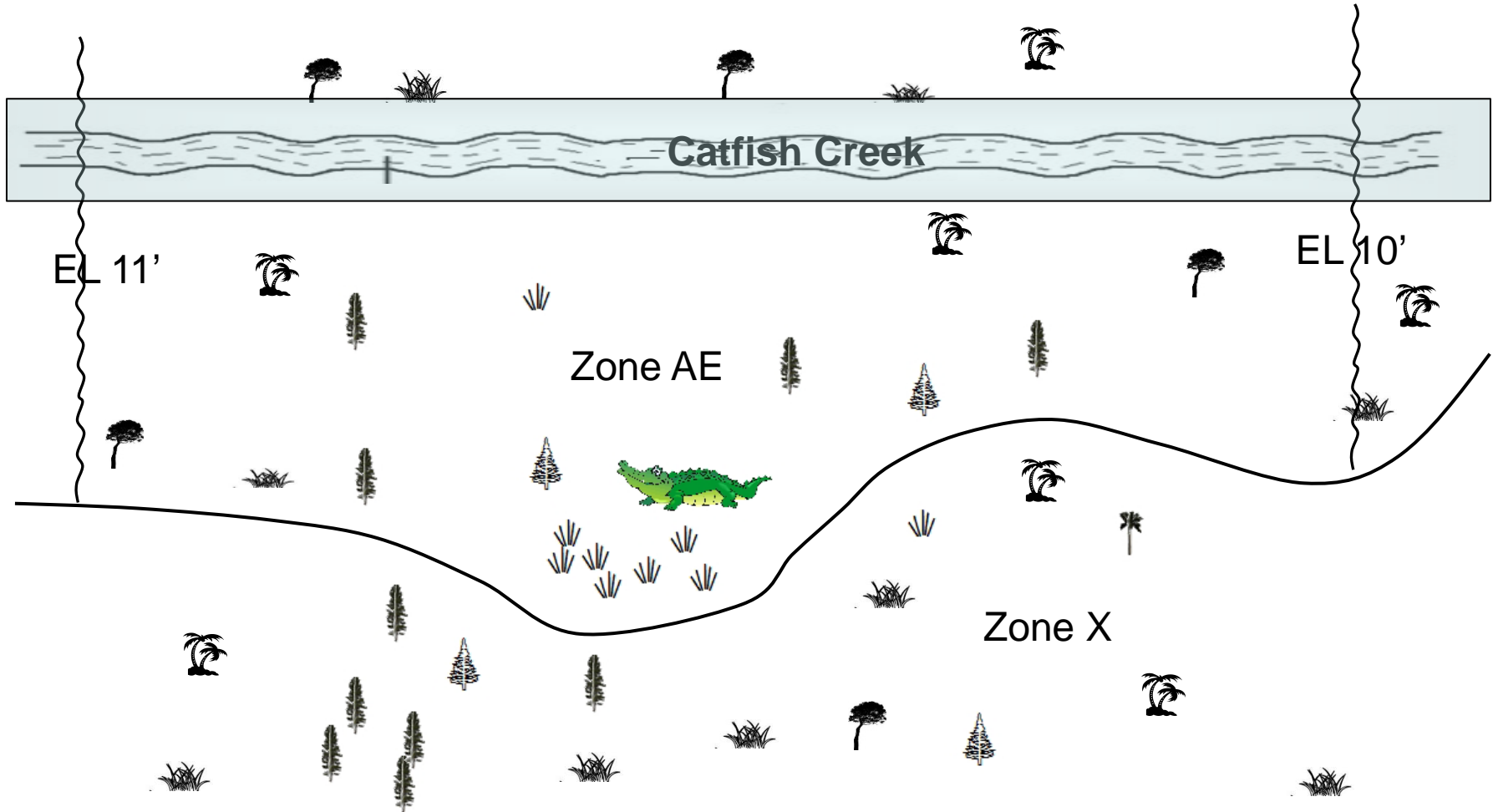
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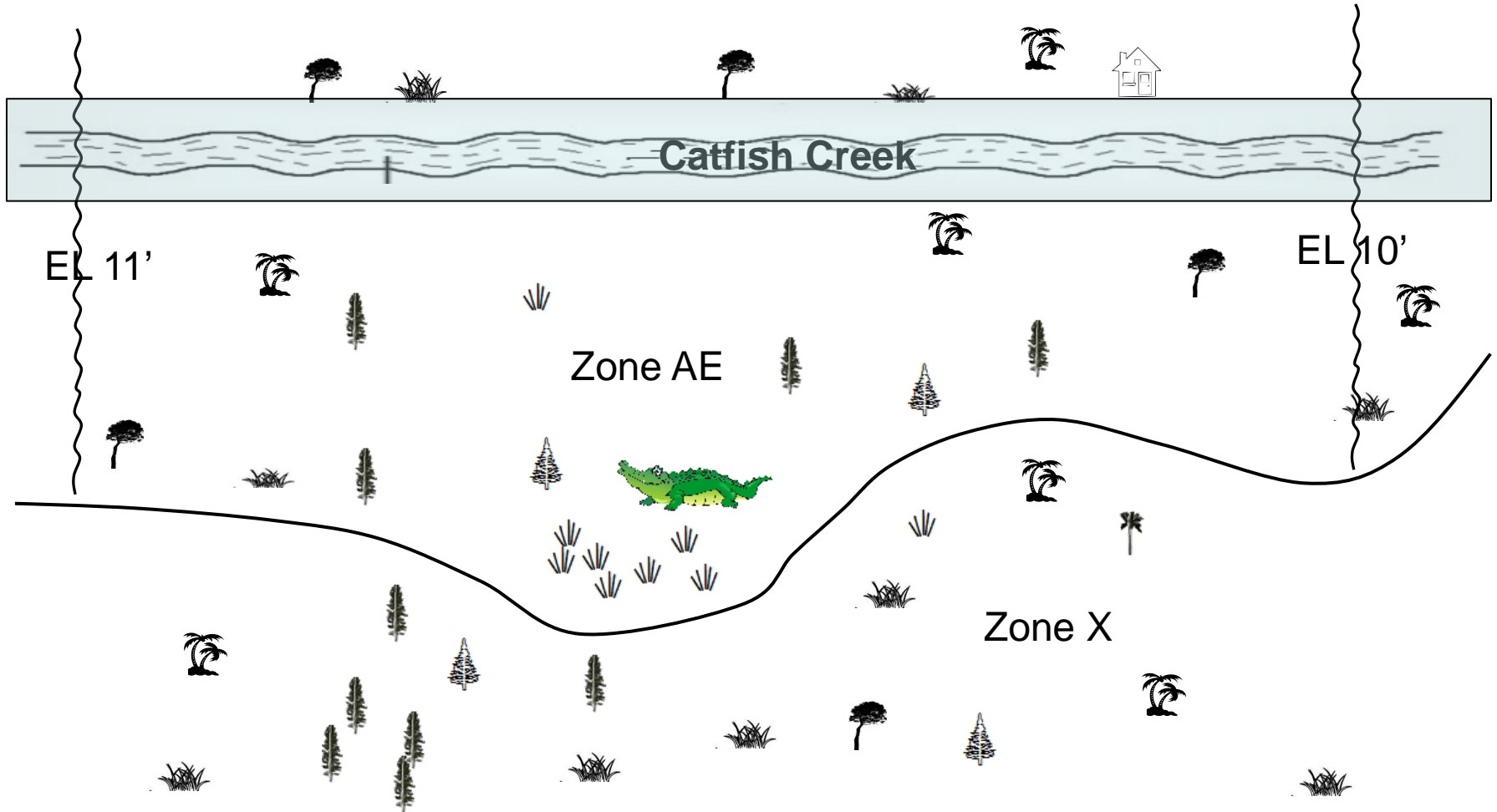
# FEMA FIRM- Catfish Creek



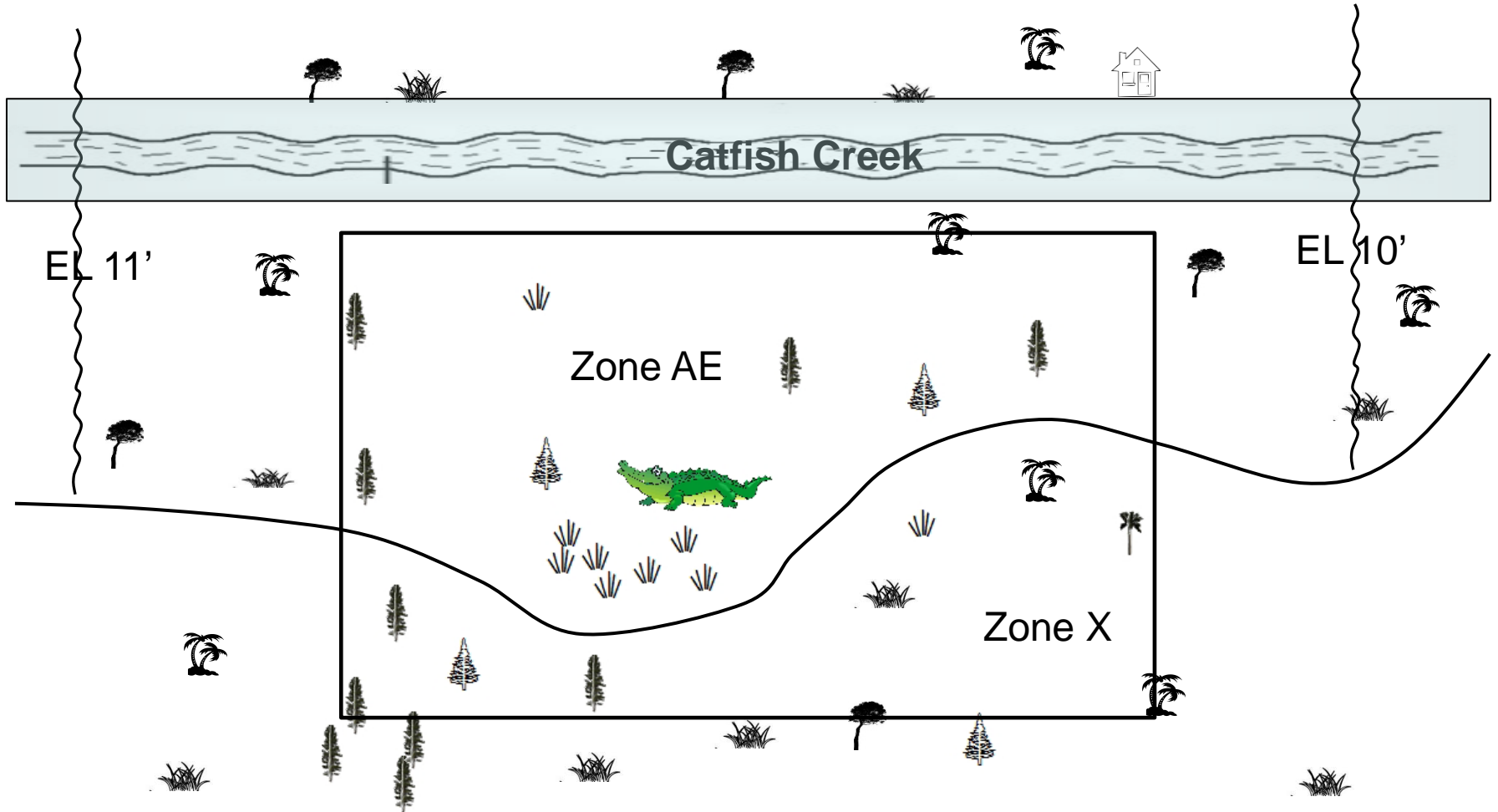
# FEMA FIRM - Catfish Creek with Floodway



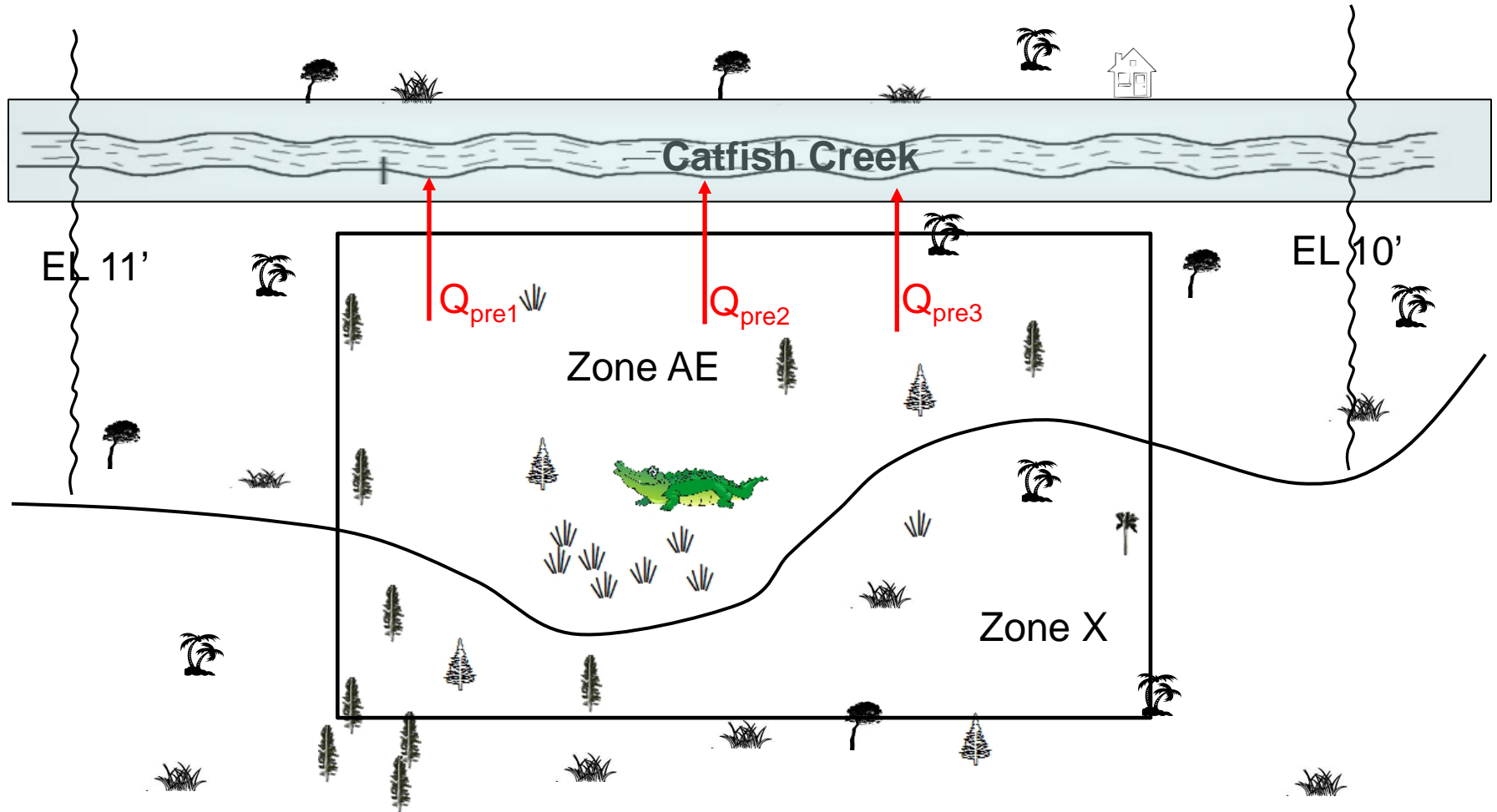
# FEMA FIRM - Catfish Creek with Floodway



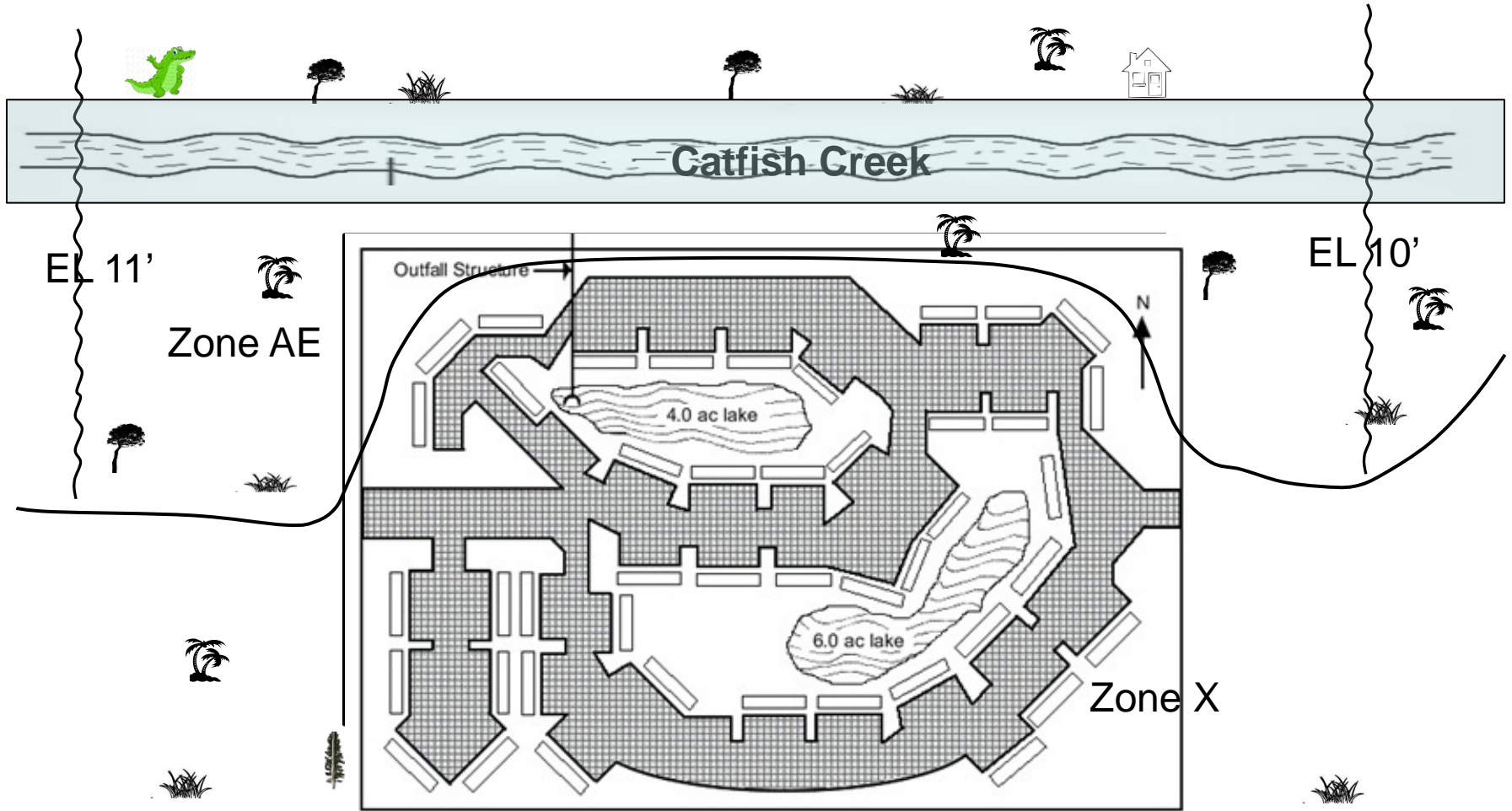
# FEMA FIRM - Catfish Creek with Floodway



# FEMA FIRM - Catfish Creek with Floodway



# FEMA FIRM - Catfish Creek with Floodway



# RECOMMENDATION

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- SFWMD Revise the ERP design requirements to include the limitation of discharges during the 100-year, 3-day rainfall to predevelopment discharge rates.