

Tomasello Consulting Engineers, Inc.

5906 Center Street, Jupiter, Florida 33458 Phone 561-575-3910 Fax 561-744-1865 dixietom@aol.com

Relationship between SFWMD ERP Criteria and the National Flood Insurance Program

July 25, 2013

National Flood Insurance Program Acronyms

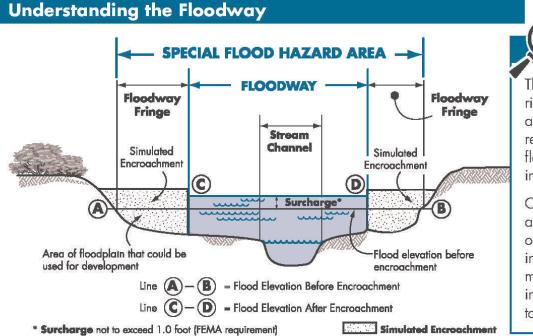
- NFIP National Flood Insurance Program
- DHS Department of Homeland Security
- FEMA Federal Emergency Management Agency
- FIS Flood Insurance Study
- FIRM Flood Insurance Rate Map
 - SFHA Special Flood Hazard Area
 - HHA High Hazard Area (velocity zones)
 - **BFE Base Flood Elevations**
- CRS Community Rating System



- 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



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 fooding, particularly from local drainage sources of small size. The community map repeationy should be consulted for meaning underland an additional flood hearent information.

b) obtain more adulted information in paras where **Base Tourd Tourisme** (FFE), or for **Tourisme** to be not advantumed, users as increased to circuit AF Tourisme of Contract (Contract Contract), and the contract Contract (Contract Contract) (Contract) (Contrac

one services that provide an its in the risk region and/of the clubble in comparison with in FIMM to purpose divide a contribution and/of footpatien analysement. Losses a Base Flood Elevatione (BFEs) shown on this may apply only landward of Vinith American Vinitian Clubble (FIME) NAVA (B), Users of the FIMM should be were that costal flood elevations are also provided in the Summary of Billwahre elevations table in the Flood instances (Subj report fin the Lipidadout, Elevations (Basedon Subject) and Flood instances (Subject) (Subject)

ndior foodplain management purposes when they are higher than the elevation shown on the FIRM. Ioundaries of the **floodways** were computed at cross sections and interpolate wherein cross sections. The **floodways** were based on hydrautic considerations wit

in other pertinent floodway data are provided in the Flood Insurance Study report to this jurisdiction.

billiouteness. Here is a people 24. * Also enabled in the people management billiouteness. Here is a people 24. * Also enabled in the problem in the problem. The projection used is the properties statutes with the problem. Here Finish East FIPS Zon GOD Feet, The hereboard adam was NADIS ANN 01551905 uphond. Differences in status, solvered projection of UTIE zones at the provincies of TIMBA to adamic solvered projections of UTIE zones at the provincies of TIMBA to adamic solvered projections.

sational differencies in map leasures across privatilitation boundariess. These Bernoles on or differencies in FRM. cool elevations on this map are referenced to the North Arencias Vertical Datum of Alls. These flood elevations must be compared to situations and ground elevations demond to the same vertified datum. For information regarding provession means of the Stati. wait the Northonal Geodetic Starvey velocitie at elevations.

Stress: GS Information Services GAA, INNOS12 atonal Gendetic Survey SMC-3, #9202

315 East-West Highway River Spring, Maryland 20913-3282 301) 713-3242

To doarn current elevation, description, andro tocation information for teach marks above on this mup, please contact the information Services Transf. of the National Geodetic Survey at (\$91) 713-3242 or visit its website at http://www.tops.nosa.gov/ Base map information shown on this PRM was provided in digital format by Paim Base for the Tax excites at orthorization than in the information to the plant

back Courty. The original ormopholographic base imagery was provided in outer with a conclusion exolution at a scale of 1° = 2007 from photography form lovember 2010 - January 2011. This map inflocts more doubled and up-to-take stream channel configurations for these forces are a becaused. 2014 be discussions:

codways that were transformed from the previous FIRM may have been adjusted to inform to these new stream channel configurations. As a nexit, the Flood Finities to Floodway Data tables in the Flood Insurance Study report (which contains afforitable hydraulic data) may reflect stream channel distances that differ from hit is above not his may.

iorporate limits shown on this map are based on the best data available at the time publication. Because changes due to annexations or de-annexations may have counted date in this may was published, may users should contact appropriate ommunity afficials to verify current corporate limit locations.

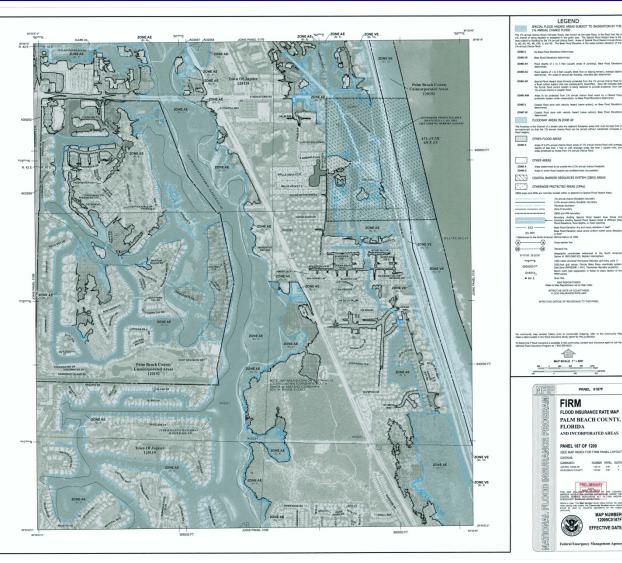
Hease refer to the separately primed Map Index for an overview map of the ocurty howing the layout of map penetic community map repository addresses, and a justing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is caladed.

For information and questions allocid this map, available products associated with this film instandy instance services of the TRN-to to solve products or the failed and the transmitter of the transmitter of the transmitter of the transmitter of advancement and start FEBANAWP (1577-233-2027) or wait the FEBAN Map Bievice stream of the transmitter of the TRN-theory and the transmitter of the TRN-theory and the transmitter products may interact distributions of this may. They if these products are interact distributions of the TRN-theory and the transmitter is the started or transmitter of the TRN-theory and the transmitter of the transmitter of the transmitter of the TRN-theory and the transmitter of the transmitter of the TRN-theory and the transmitter of the transmitter of the TRN-theory and the transmitter of the transmitter of

COASTAL BARRIER RESOURCES SYSTEM (CBRS) LEGEND

1-16-91 Otherwise Protected Area (OPA) LOCO INSURANCE NOT AMILABLE FOR STRUCTURES NEWLY BUILT OR USTANTIALLY IMPROVED ON OR AFTER NOVEMBER 16, 1991, IN ESIGNATED ORA-WITHIN THE CBRS.

Boundaries of the John K. Chafter Gostall Branter Resources System (2005) shows on the FMM were transformed from the dollar CBBs. Colling Johnson on the FMM were transformed from the dollar CBBs. Notmational purposes only. The official CBRS maps are excited by cogness via the Costall Barter Resources Act, as amended, and manufactures by the U.S. Fah and Withits Service (FMB). The official the CBRS are evaluates for domical of <u>Biolicinet Resources</u>. For an official determination of whether or not as area in located within the CBRS are evaluates for domical of <u>Biolicinet Resources</u>. For an official determination of whether or not as area in located within the cold office for the and Hold Biolicinet Resources the FMR





SFWMD Environmental Resources Permitting

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



SFWMD SWM/ERP Rainfall Criteria for

Onsite Flood Protection

• Internal Roads (5-year, 24-hour) varies

Parking Lots (5-year, 24-hour),
(5-year, 1 hour exfilt trenches)

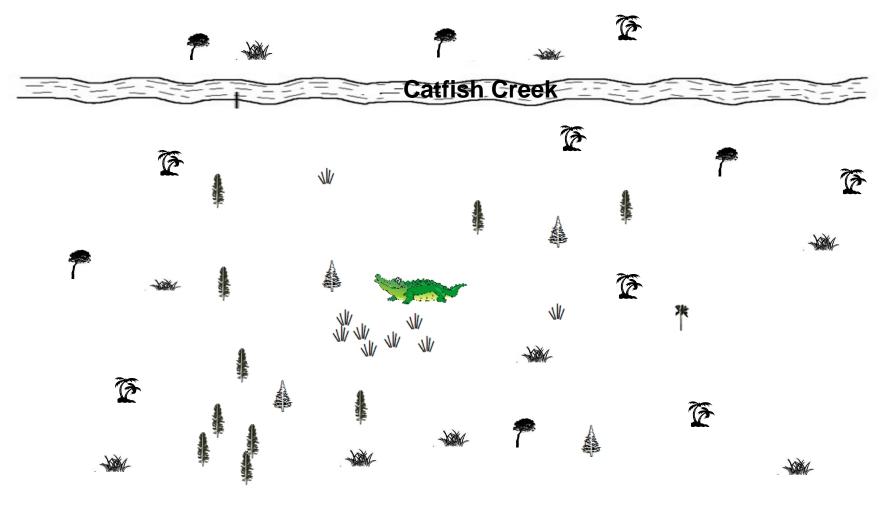
• Finished Floors (100-year, 3-day w/no discharge or FIRM, whichever higher)



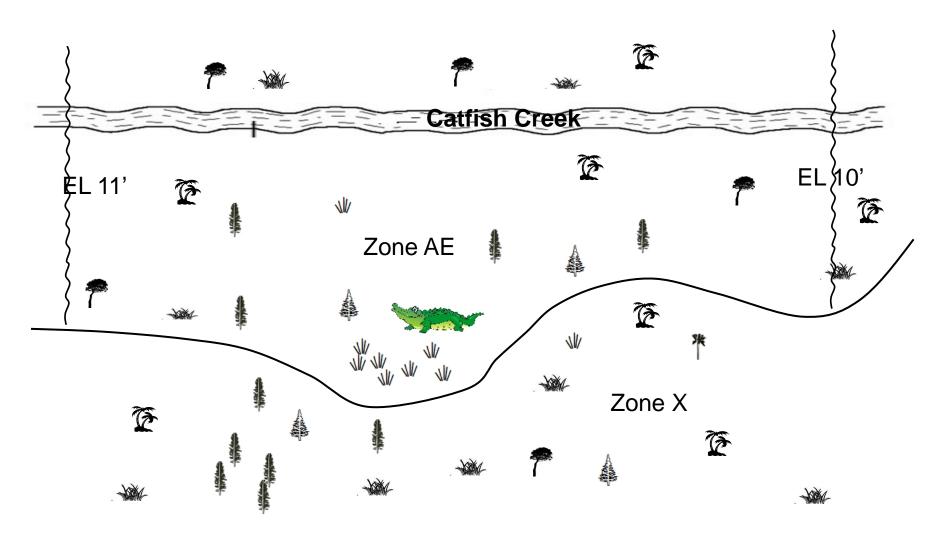
- Water Quality Detention (2.5 inches X Impervious Area(acres) - or- 1 inch of runoff, which ever greater)
- Floodplain Encroachment (100 year, 3 day)
- Floodway Encroachment (100 year, 3 day)
- Discharge Limitation (25 year, 3 day, Prevs Post-Development)



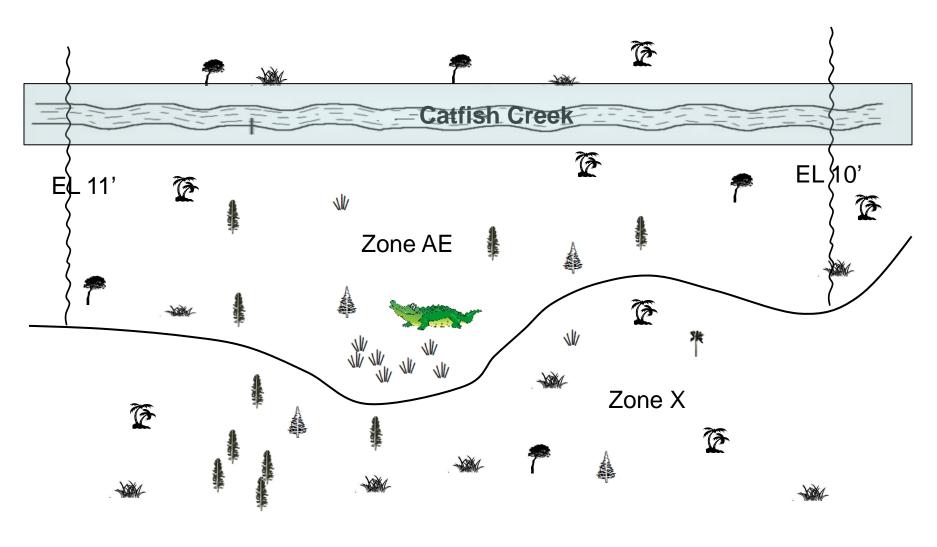
Catfish Creek



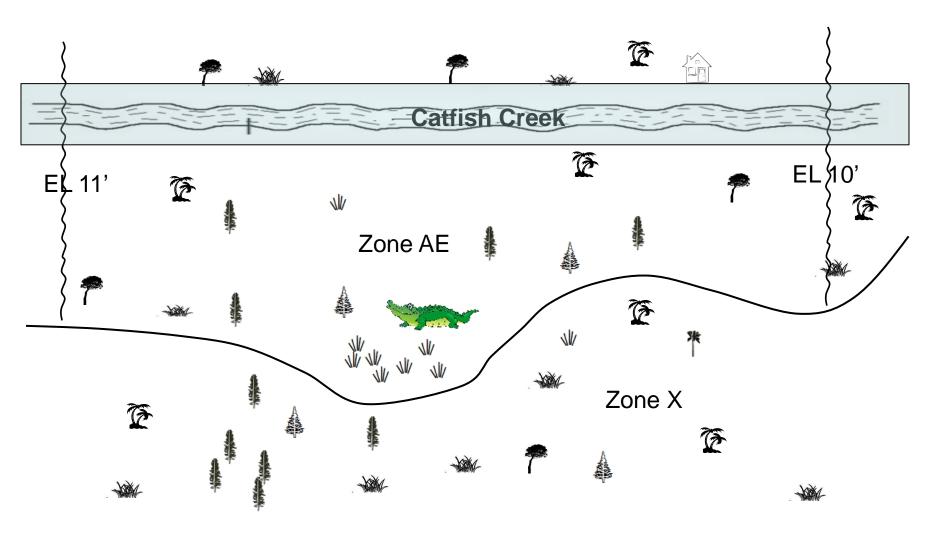
FEMA FIRM- Catfish Creek

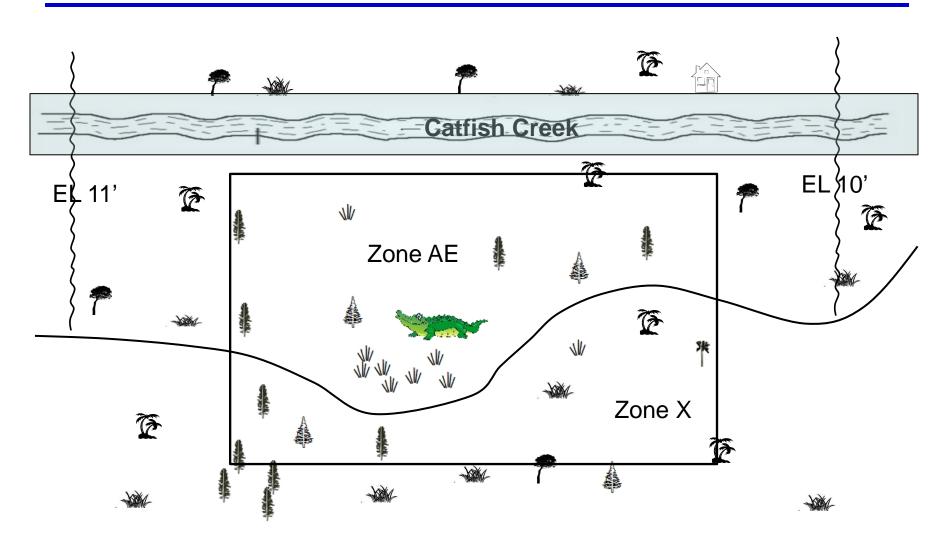


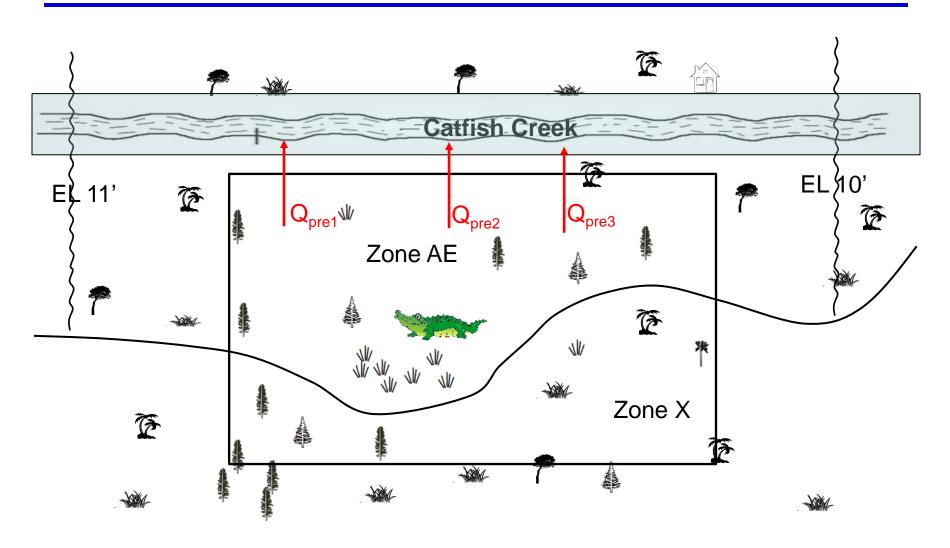
tce

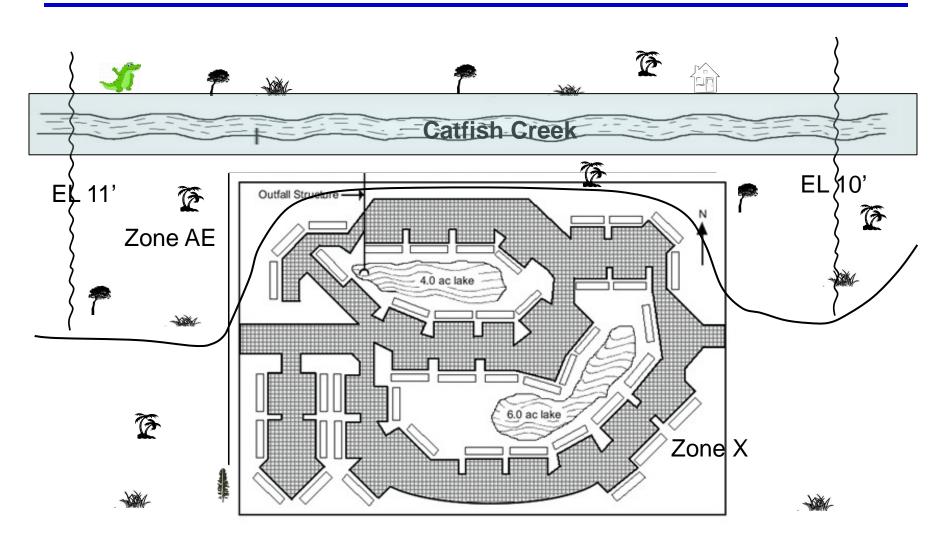


tce











RECOMMENDATION

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

