

**PALM BEACH COUNTY
BOARD OF COUNTY COMMISSIONERS**

WORKSHOP SUMMARY

Meeting Date: August 27, 2024

Department: Planning, Zoning, and Building

I. EXECUTIVE BRIEF

Title: Continuation from July 9, 2024 workshop. Providing Update and Seeking Direction regarding Palm Beach County's (PBC's) Flood Plain Regulation Responsibilities and Actions given Federal Emergency Management Agency (FEMA) map changes.

Summary: Staff will provide a recap of items presented at the July 9, 2024 Workshop and review and discuss the following items for the Board's information and direction:

- Emergency Management to return at a later date to the BCC with a separate agenda item on Community Rating System (CRS) strategies;
- Review status of LiDAR for Flood Insurance Rate Map (FIRM) map development and other uses;
- Update on FEMA Cooperating Technical Partner (CTP) process versus FEMA's Physical Map Revision (PMR) process; and
- Review status of FEMA FIRMs and PBC potential remapping efforts with schedule and associated costs;
 - PZB will return to the BCC on future non-ad valorem budget transfer needed to fund these efforts;
- Description of PBC existing lot filling regulations and potential impacts of unregulated lot filling on area drainage. Countywide (RM)

Background and Policy Issues: Palm Beach County is responsible for administering and enforcing State, Local, and Federal floodplain regulations (Florida Building Code, Article 18 ULDC, & 44CFR-59&60) and actively seeks to ensure the residents of PBC are afforded the maximum cost effective resiliency and also achieve and maintain the maximum practicable insurance discounts for their structures. These activities ensure the availability of FDIC insured mortgages, disaster relief grants, and mitigation loans in unincorporated Palm Beach County.

Recommended by:  8/19/2024
Department Director **Date**

Approved by:  8/23/24
Deputy County Administrator **Date**

II. FISCAL IMPACT ANALYSIS

A. Five Year Summary of Fiscal Impact:


Fiscal Years	2024	2025	2026	2027	2028
Capital Expenditures	_____	_____	_____	_____	_____
Operating Costs	_____	_____	_____	_____	_____
External Revenues	_____	_____	_____	_____	_____
Program Income (County)	_____	_____	_____	_____	_____
In-Kind Match (County)	_____	_____	_____	_____	_____
NET FISCAL IMPACT	_____	_____	_____	_____	_____
# ADDITIONAL FTE POSITIONS (Cumulative)	_____	_____	_____	_____	_____
Is Item Included in Current Budget?			Yes _____	No _____	
Does this Item include the use of Federal Funds?			Yes _____	No _____	
Does this Item include the use of State Funds?			Yes _____	No _____	

Budget Account No.:

Fund _____ Department _____ Unit _____ Object _____ Program _____

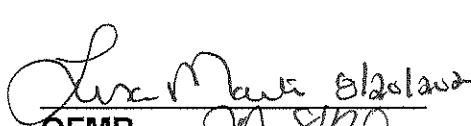
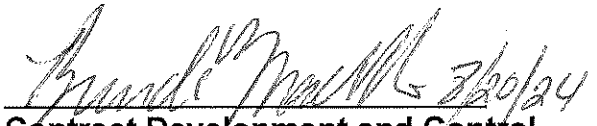
B. Recommended Sources of Funds/Summary of Fiscal Impact:

C. Department Fiscal Review:

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III. REVIEW COMMENTS

A. OFMB Fiscal and /or Contract Dev. and Control Comments:

<p> OFMB <i>8/20/24</i> <i>8/20</i></p>	<p> Contract Development and Control <i>8/20/24</i></p>
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B. Legal Sufficiency:


Assistant County Attorney

C. Other Department Review:

Department Director



**Planning
Zoning and
Building Department**

New FEMA Flood Map Update

August 27, 2024

Presenters:

Doug Wise, Building Official

Paul Linton, Water Resources Manager

RECAP FROM JULY WORKSHOP AND PRESENTATION OVERVIEW

In the July 9th workshop, staff provided information on:

- Status of Watershed Management Plan
- Status of Herbert Hoover Dike (HHD) Rehabilitation
- Flood Insurance Rate Maps (FIRMs) - Coastal and Riverine
- Scientific Resolution Panel Update
- Map Update Options - Physical Map Revision (PMR) or Cooperating Technical Partner (CTP)
- CRS Overview

The following presentation provides information requested by the BCC:

- FEMA Flood Insurance Rate Maps (FIRMs)/schedule and potential cost for updating
- Public outreach on new FEMA eastern flood maps
- LiDAR overview
- Current regulations on fill placement
- Impacts of unregulated fill

PUBLIC OUTREACH INITIATIVES

- For New FEMA Maps Effective December 20, 2024
 - Informational landing page on PZB's website
 - Three public outreach open house events in September with representatives from the county, municipalities, FEMA, and the insurance industry
 - Ch. 20 program featuring Doug Wise and Paul Linton discussing new flood maps, etc.
 - Ch. 20 PSA re: new flood maps and open house events
 - Social media outreach campaign with Public Affairs, countywide PIOs and municipalities
 - Press release including follow up to promote the open house events
- Additional Outreach & Education Sessions coming soon to the Western Communities pending direction on new mapping efforts

Upcoming Public Outreach Open House Events

Representatives from various agencies will be present to provide important information concerning flood zones, mandated insurance, pending deadlines and more.

PALM BEACH COUNTY
MUNICIPALITIES
FEMA
INSURANCE INDUSTRY

Boynton Beach	West Palm Beach	Jupiter
September 11, 2024 Wednesday 5:00 pm to 8:00 pm	September 14, 2024 Saturday 10:00 am to 1:00 pm	September 26, 2024 Thursday 5:00 pm to 8:00 pm
Boynton Beach Police Dept. - Community Rm. 2100 High Ridge Road Boynton Beach	Howard Park Community Center 1302 Parker Avenue West Palm Beach	Jupiter Community Center - Auditorium 200 Military Trail Jupiter
The following municipalities will have representatives in attendance:	The following municipalities will have representatives in attendance:	The following municipalities will have representatives in attendance:
<ul style="list-style-type: none"> • Boca Raton • Boynton Beach • Briny Breezes • Delray Beach • Highland Beach • Hypoluno • Ocean Ridge • South Palm Beach • Unincorporated PBC 	<ul style="list-style-type: none"> • Lake Worth Beach • Lantana • Manalapan • West Palm Beach • Palm Beach • Unincorporated PBC 	<ul style="list-style-type: none"> • Jupiter • Jupiter Inlet Colony • Lake Park • North Palm Beach • Palm Beach Gardens • Palm Beach Shores • Riviera Beach • Tequesta • Juno Beach • Unincorporated PBC

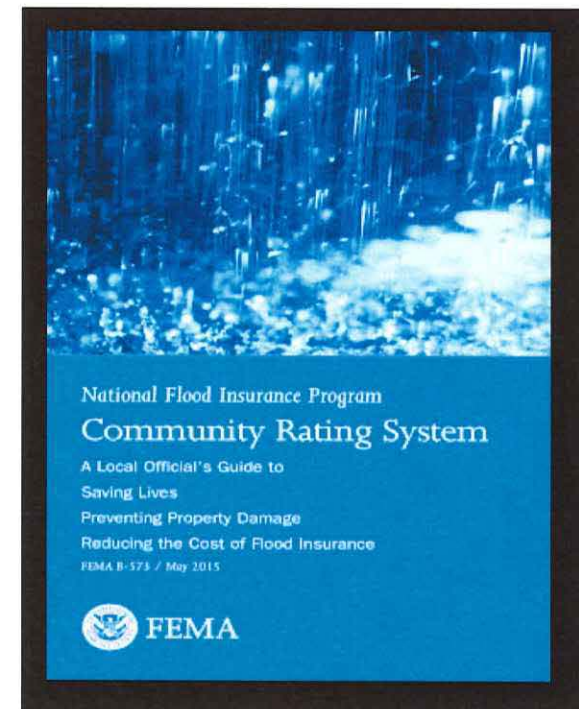
COMING SOON
Western Community Outreach Event
Details to Follow.



COMMUNITY RATING SYSTEM UPDATE

At a future workshop, Emergency Management (EM) staff will provide the BCC with an update on Community Rating System (CRS) strategies:

- EM, PZB and other PBC Departments are currently supporting the on-site audit held every three years
- Future BCC workshop presentation by EM will include audit results



FLOOD DAMAGE PREVENTION ORDINANCE (Article 18)

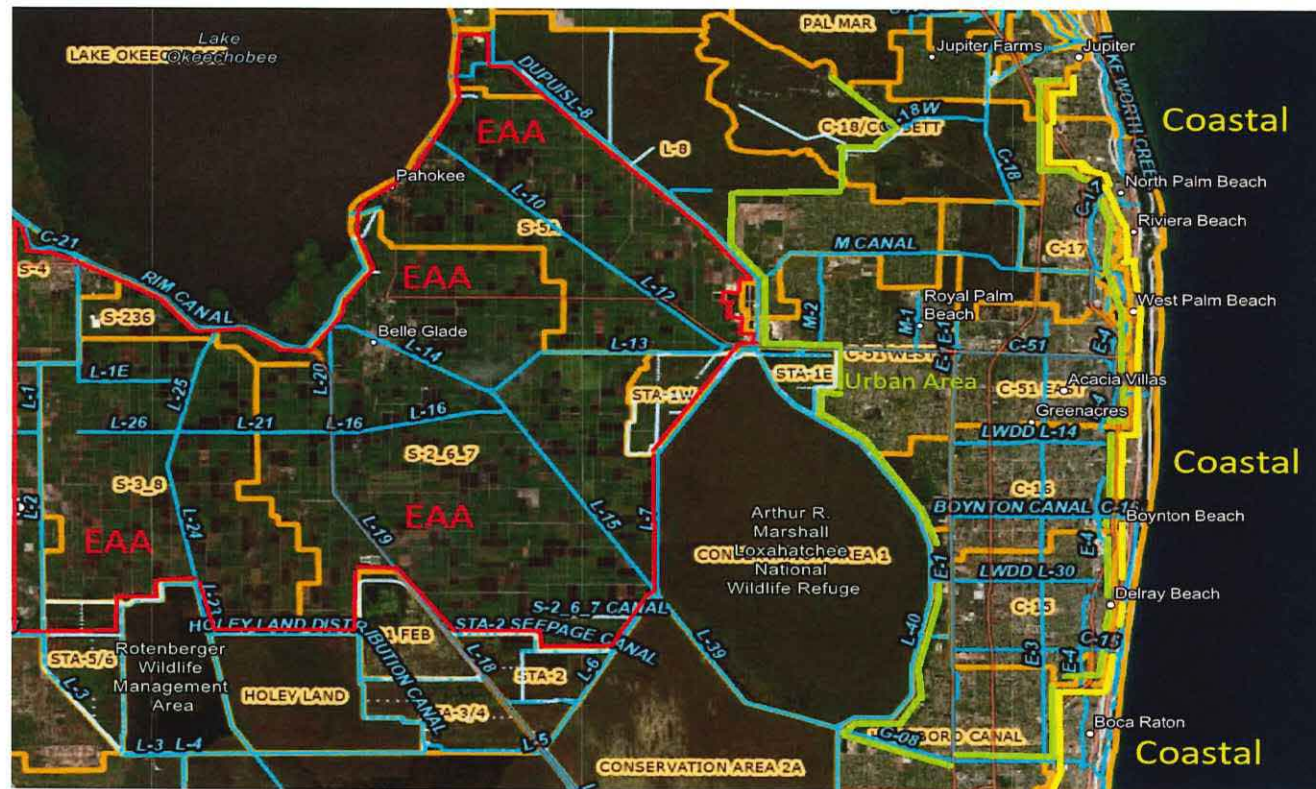
- Minor CRS changes are in the works to take credit for existing efforts. Major changes to the ordinance regarding increased CRS activity is on hold until BCC direction.
- PBC is required to update the ordinance with mandatory FEMA modifications unrelated to the pending coastal map adoption
- Draft ordinance will be presented to the BCC for review and input after FEMA approval.



PROPOSED PBC FIRMS UPDATE

3 Different Basins

- West Basin Around Lake Okeechobee
- SFWMD Basins
- Tidal Basins.



PROPOSED PBC FIRMs UPDATE

GROUND SURFACE ELEVATIONS FROM LiDAR

Procurement of LiDAR (Light Detection and Ranging) to obtain current higher resolution estimates of ground surface elevations for use with FIRM updates. This work is expected to be completed in the 2024/2025 dry season. The LiDAR data will also be used by multiple agencies and jurisdictions.

UPDATE ON COOPERATING TECHNICAL PARTNERSHIP (CTP)

As directed, staff is exploring the requirements and benefits of being a CTP. In the interim or as an alternative, we will utilize FEMA's Physical Map Revision (PMR) process, which is available to all communities.

PROPOSED PBC FIRMS UPDATE

1. Western PBC incl. municipalities FIRMS

- Procurement to update the FIRMs that affect western PBC municipalities and infrastructure around Lake Okeechobee/Herbert Hoover Dike will start in early 2025 after the new LiDAR data is available.
- Estimated cost is \$500,000 with an estimated duration of 2 years.
- The western mapping area is ideal for initiating the mapping process and leveraging knowledge obtained during the PMR process for continuing mapping efforts.
- Modeling of this area is simpler because it only has rainfall

PROPOSED PBC FIRMS UPDATE

2. SFWMD Basin FIRMS

Perform mapping studies of the seven basins and their tributaries* with an estimated \$7 million consulting cost which does not include PBC staff time or FEMA processing fees. Will use existing SFWMD Flood Protection Level of Service (FPLOS) models available in 2025.

Recommend two-phase approach:

Phase One: (\$500,000 to \$1 million) - assess the basins for flooding risk (e.g., older/lower neighborhoods); identify data needs and prioritize basin

Phase Two: (\$6 to \$6.5 million) - perform analysis and update maps of prioritized basins/areas

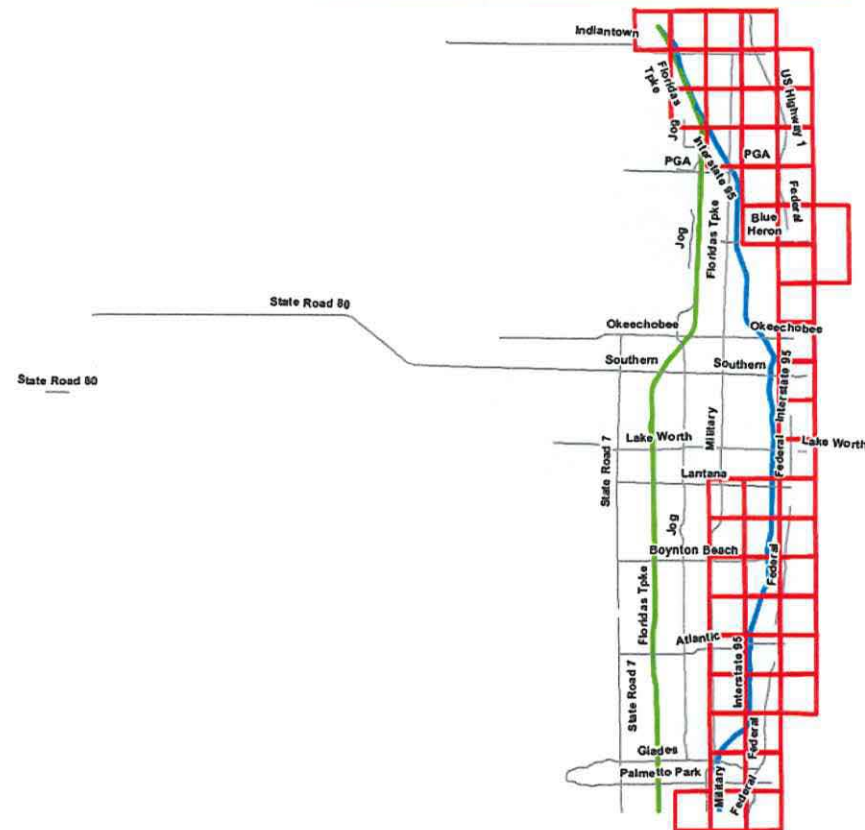
* Hillsboro, C-15, 16, 51, 17, and 18, and L-8

PROPOSED PBC FIRMS UPDATE

3. Tidal FIRMS:

Potential remapping of the Tidal FIRMS will be based on consultant's recommendation of either a 2- or 3-phase process.

Staff is considering three-phase process as follows:



PROPOSED PBC FIRMS UPDATE

3. Tidal FIRMS – proposed phases totaling approximately \$2,000,000

- Phase One/Reconnaissance (\$100,000): This would determine if investing in full modeling would result in meaningful changes to the mapped BFEs and includes modeling runs with sea level rise.
- Phase Two/Model Production Runs and Statistics (\$400,000): Development of full data set, model development and statistical analysis, peer review, and production runs with FEMA participation.
- Phase Three/FIRMS Update (\$1,500,000): Production of updated FIRMS and Flood Insurance Study (FIS).

PROPOSED PBC FIRMS UPDATE

Three-phases tidal study strategy:

- Scope and cost would be developed and evaluated for each subsequent phase after completion of the previous phase.
- The time required could vary considerably based on the time it takes to get high resolution wind field data and responses from FEMA.



South County



North County

CONFIRM BCC DIRECTION ON FIRM UPDATES

- These updates will provide a clearer understanding of the true flood risks in unincorporated PBC and more accurate FIRMs
- With confirmation from the BCC, staff will proceed with the outlined approach to the FIRM updates.
- In future BCC meetings, staff will request required non-ad valorem budget transfers, and update the status of each project and schedule.

EXISTING FILL REGULATIONS

PBC's Flood Damage Prevention Ordinance:

Limits the Amount of Fill Allowed to Construct an Enclosed Building Foundation

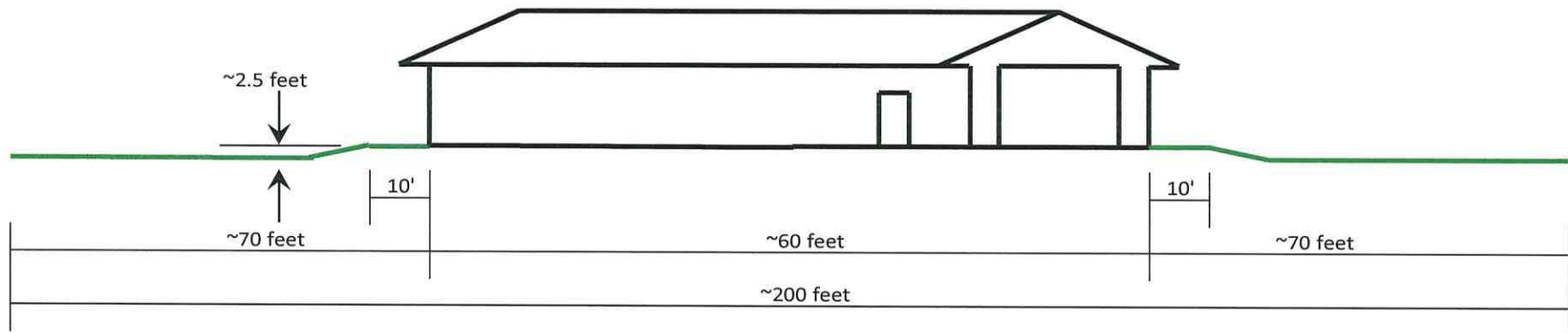
(Maximum volume of imported fill shall be limited to that necessary to elevate the slab-on-grade not more than six inches above minimum floor elevation....with side slopes of the pad of 1V:5H to 1V:3H starting ten feet from the slab edges. (ULDC Article 18 Section 18.D.5.A.2)).

Some exceptions to the above requirements:

- Fill required for raised septic mounds
- Earth fill dug from on-site excavation, provided grading directs drainage back to the site of excavation (e.g., pond); does not account for water table.
- Backfill when stem wall construction is used (Sect. 18.D.5.A.5.c): *“Any volume of fill for placement inside the perimeter foundation walls to raise an interior concrete slab to any higher elevation shall be allowed...”*

EXAMPLE: IMPACT OF FILL

A 1.25 acre lot with a 3,000 SF house, driveway, and septic tank and drain field
top of fill covers about 20 percent of the lot



Water depths for 18 inch Rainfall generating 12 inches of Runoff
Undeveloped: ~12 inches above original ground surface (GS)
With nominal house fill: ~13 inches above original GS
With one foot of unregulated fill: ~20 inches above original GS

BUILDING LOT COVERAGE EXAMPLE

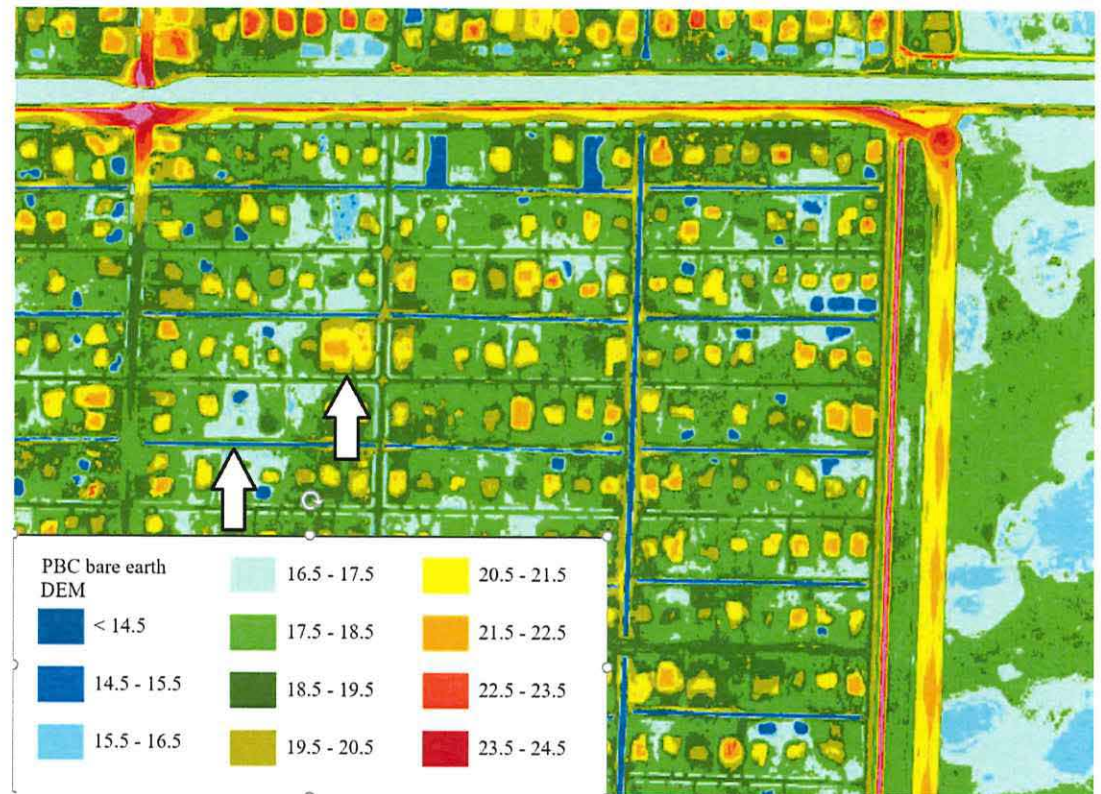
PBC's Property Development Regulations (Chapter D Section 1.A) limits building coverage to 20 percent for Zoning District AR (RR-2.5):

- A 1.25 acre lot would be limited to a building coverage area of 11,000 sf about four times larger than the 3,000 sf house in the previous example.
- With the current fill limitation and assumption from the previous example, the maximum lot coverage would result in a water level increase of about 4 inches (approximately 13 to 17 inches above original ground surface).
- With 12 inches of fill on the remainder of the lot the water would be about 3 inches higher (from about 20 to about 23 inches above original ground surface).

POTENTIAL IMPACTS OF UNREGULATED FILL

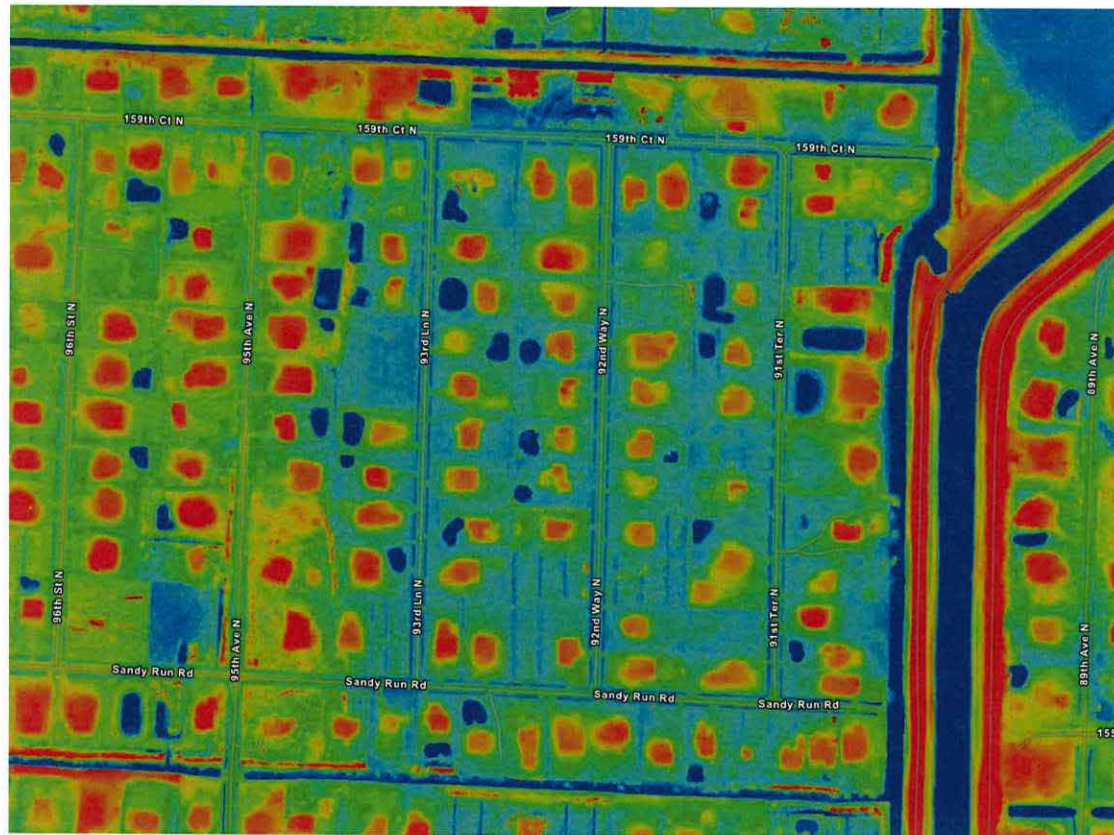
Acreage:

- Due to vertical and spatial resolution of the LiDAR, this information should only be used qualitatively.
- There are two parcels designated with an arrow that appear to have more fill.
- The brighter color shows the raised areas for house pads (2-3 feet higher).



POTENTIAL IMPACTS OF UNREGULATED FILL

Jupiter Farms



QUESTIONS AND DIRECTION FROM BCC

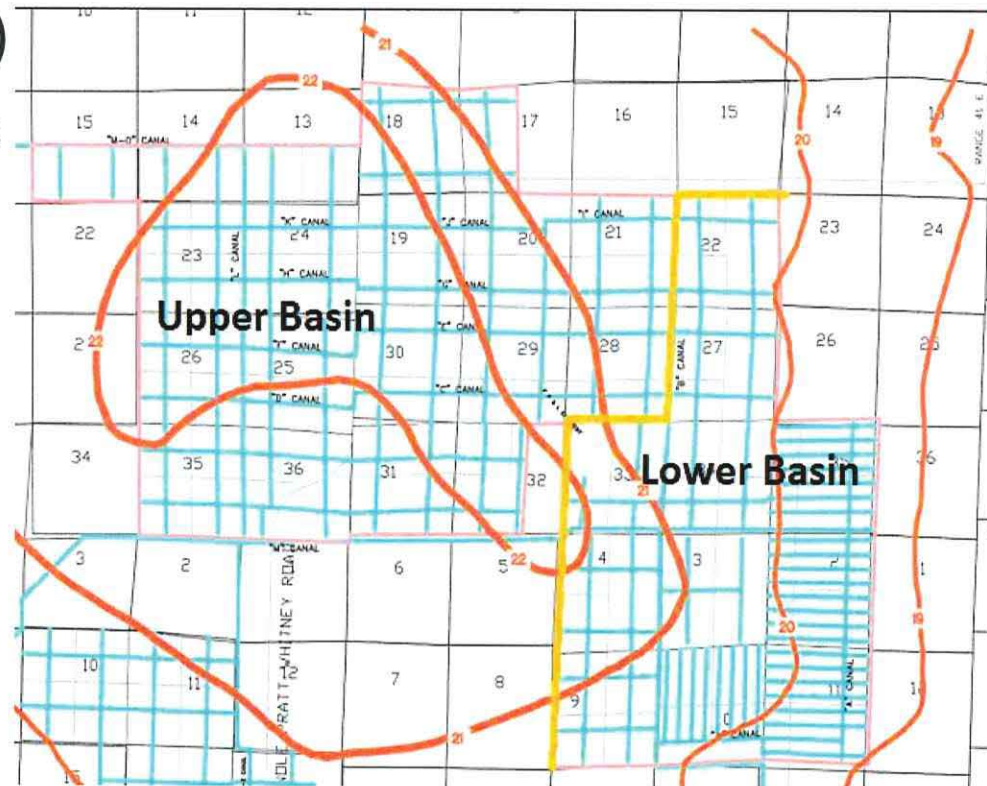


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POTENTIAL IMPACTS OF UNREGULATED FILL

ELEVATION DIFFERENCES (ITID)

- The larger development does have some elevation differences.
- There is an upper and lower basin with structures to control the flow between them.



POTENTIAL IMPACTS OF UNREGULATED FILL

REPLACING WATER STORAGE LOST DUE TO UNREGULATED FILL IS EXTREMELY COSTLY!

For example: An identified ITID parcel could provide about 6 acre-feet of usable storage with an estimated cost of approx. \$250,000. Details include:

- A 1.4 acre parcel with about 1.24 acres outside the ITID easements excavated below 13.5 feet NGVD.
- Cost of storage is about \$42,000 per acre-feet or \$50 per cubic yard.

For example, ITID owns two parcels excavated below the water table and connected to their canal – providing additional storage when canals are lowered.