

RESOLUTION 2023 - 028

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF NASSAU COUNTY, FLORIDA, ADOPTING THOMAS CREEK IMPLEMENTATION PLAN; PROVIDING STUDY FINDINGS; PROVIDING FOR APPLICATION; DIRECTING THE COUNTY MANAGER TO DEVELOP AND PROVIDE IMPLEMENTING LEGISLATION; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the goal of the Thomas Creek Planning Assistance to States Study was to find a sustainable solution to the flooding in the Thomas Creek Watershed completed in 2022, and the Implementation Plan provides a provision to the study findings execution; and

WHEREAS, an objective of the Implementation Plan is to update the Roadway and Drainage Standards to strengthen current drainage regulations; and

WHEREAS, the Plan includes applying for State, Local, and Federal grants to meet the objectives of the Implementation Plan and match funds provided by the County as needed; and

WHEREAS, the Plan includes updating the FEMA floodplain panels to reflect the Planning Assistance to States findings to meet the requirements of the current Floodplain Management Regulations to reflect the best available data; and

WHEREAS, the Implementation Plan conforms with the intent of the Planning Assistance to States study findings; and

WHEREAS, a series of community meetings were conducted to obtain input from the community on the Implementation Plan, specifically in regard to connections with the interest in the land acquisition process, all of which have been incorporated into the Thomas Creek Implementation Plan; and

WHEREAS, the Board now finds it in the best interest of the County and its citizens to adopt the policies and recommendations included in the Thomas Creek Implementation Plan.

NOW, THEREFORE, BE IT RESOVLED by the Board of County Commissioners of Nassau County, Florida, as follows:

SECTION 1. FINDINGS. The above findings are true and correct and are hereby incorporated herein by reference.

SECTION 2. ADOPTION OF IMPLEMENTATION PLAN. The Thomas Creek Implementation Plan dated December, 2022, attached hereto as Appendix “A”, and incorporated herein by reference (the “Thomas Creek Implementation Plan”) is hereby approved.

SECTION 3. IMPLEMENTATION AND APPLICABILITY. The Thomas Creek Implementation Plan shall be a guide for solutions to the flooding in Thomas Creek and future development and redevelopment within the Thomas Creek Watershed.

SECTION 4. EFFECTIVE DATE. This Resolution shall take effect immediately upon its passage.

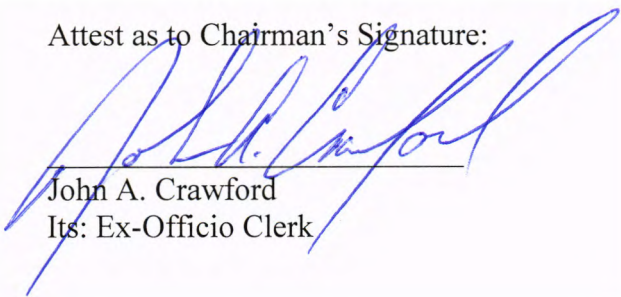
PASSED AND ADOPTED this 27th day of March, 2023.

**BOARD OF COUNTY COMMISSIONERS
NASSAU COUNTY, FLORIDA**



KLYNT A. FARMER
CHAIRMAN

Attest as to Chairman's Signature:



John A. Crawford
Its: Ex-Officio Clerk

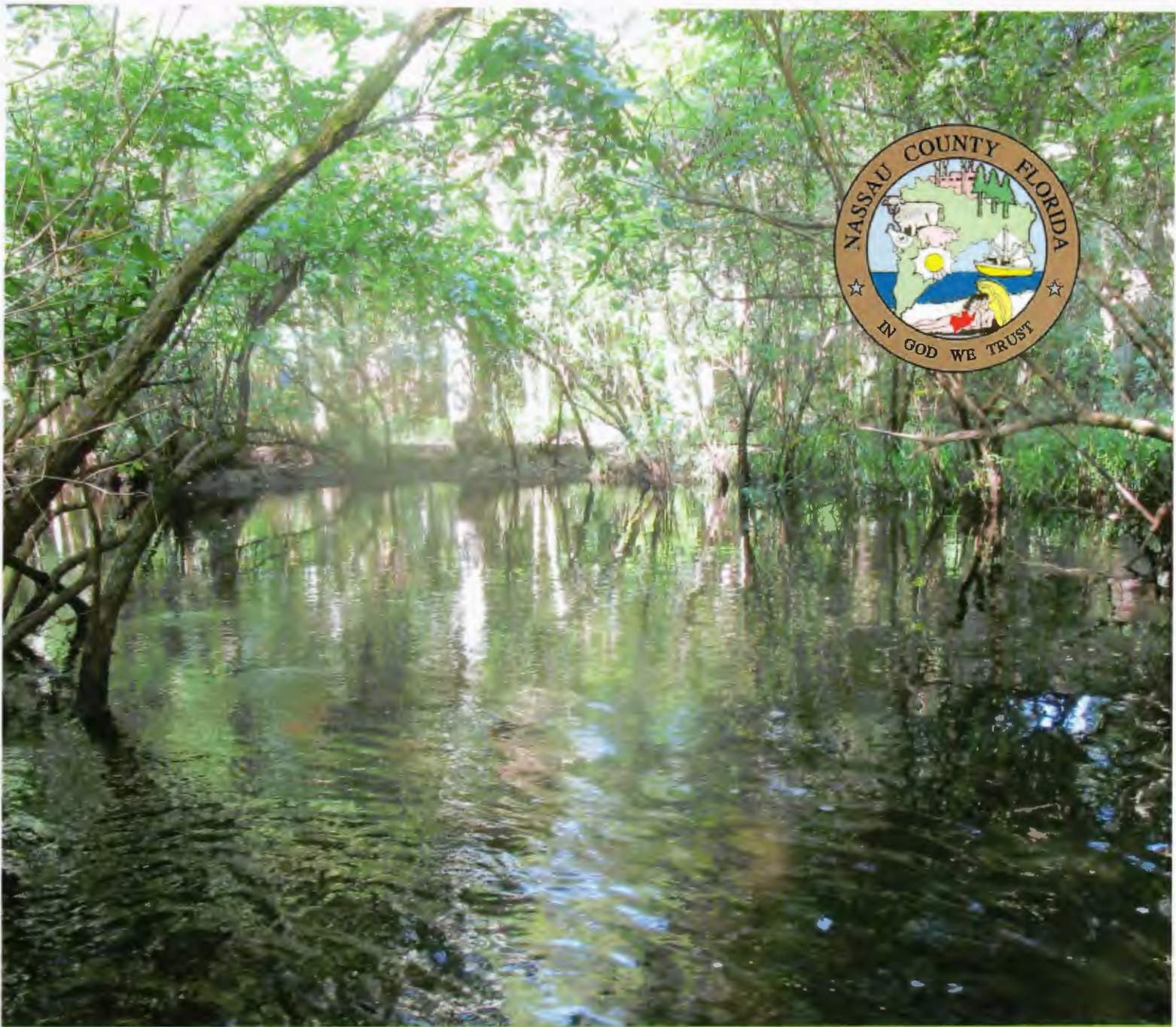
Approved as to form by the Nassau
County Attorney:



Denise C. May

APPENDIX A

THOMAS CREEK IMPLEMENTATION PLAN



Thomas Creek Implementation Plan

- Process forward the USACE Planning Assistance to States Study Recommendations

December 2022

Nassaucountyfl.com

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1. Executive Summary

- On June 13, 2022 the Nassau County Board of County Commissioners approved the joint Study with the United States Army Corps of Engineers (USACE). The Board directed staff to present an Implementation Plan within six months of this approval.

Nassau County and the Army Corps conducted a Planning Assistance to States (PAS) Study to review the hydrology and riverine flooding in the Thomas Creek area. The Thomas Creek watershed has been a drainage concern since development started in the area. Previous efforts to mitigate the flooding with structural components, drainage system maintenance, and snag and clearing has been ineffective.

The PAS Study reviewed history events, current conditions, and multiple alternatives to solve the intent of the study. The intent was to remove the flood hazard for citizens during a 100 year storm event.



FIGURE 1 Lem Turner 1947 after Cape Sable Hurricane.

There will be Not-for-profit organizations, private citizens and private citizen groups, as well as state and federal government agencies involved in the solution to this community wide concern. Several of these groups have funding sources to mitigate hazards or increase resiliency.

The results and action plan are detailed below and outlined in priority steps. The time line will be dictated by funding sources, willingness of citizens in the area, and grant submission dates. Staff does not expect this to be an expedient process, but



FIGURE 2 Evergreen Estates after Hurricane Irma in 2017

rather taking place over the next ten to twenty years. It is recommended to pursue all voluntary land acquisition within five years of the plan approval. A Board commitment to allocate one million dollars annually in that time frame would provide the needed County match to be eligible for up to \$3 million in State and/or Federal grant funds. This would allow an estimated 8 parcels to be acquired per awarded cycle. While scores over 50 meet the intent of study, scores higher than 75 will be the most competitive for funds. This is around 120 parcels and is estimated to take 15 fully funded grant cycles to complete. Scoring system can be found in on section 4.4 At the end of the five years, the board can reassess the given process and continue forward as needed.

1.1 Location

Thomas Creek is located south of the Town of Callahan along the Nassau/Duval border. The watershed is in both Counties, but the PAS study focused on the most problematic areas within the basin on the Nassau County side.

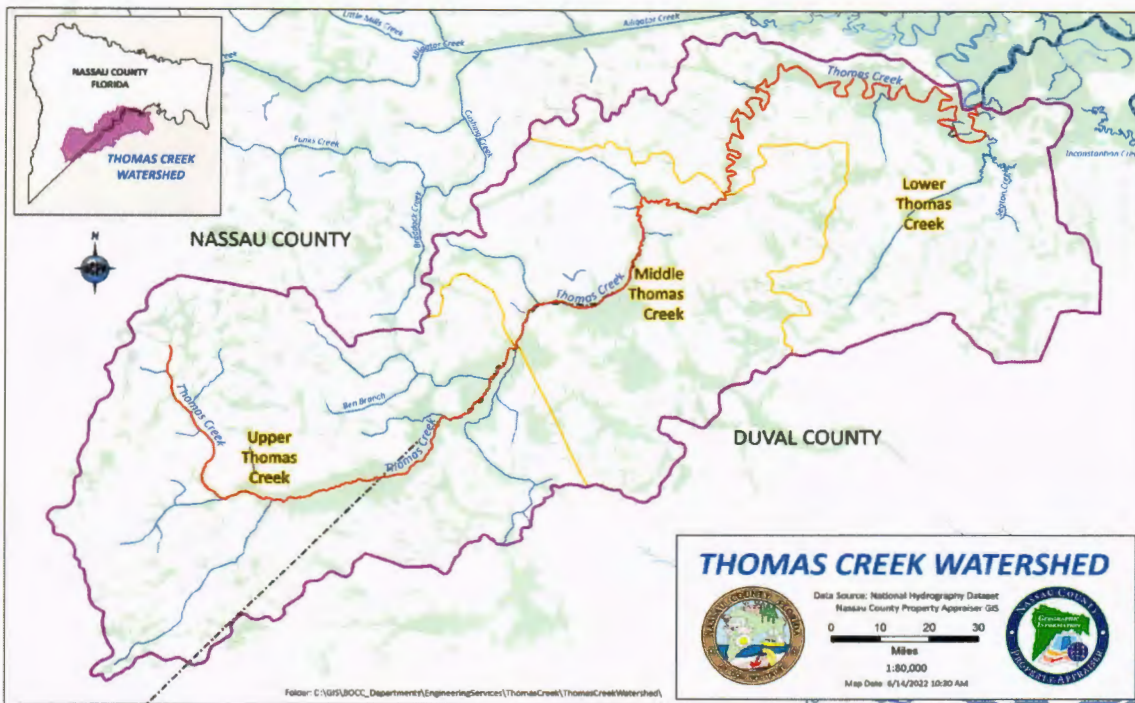


FIGURE 3 Entire watershed

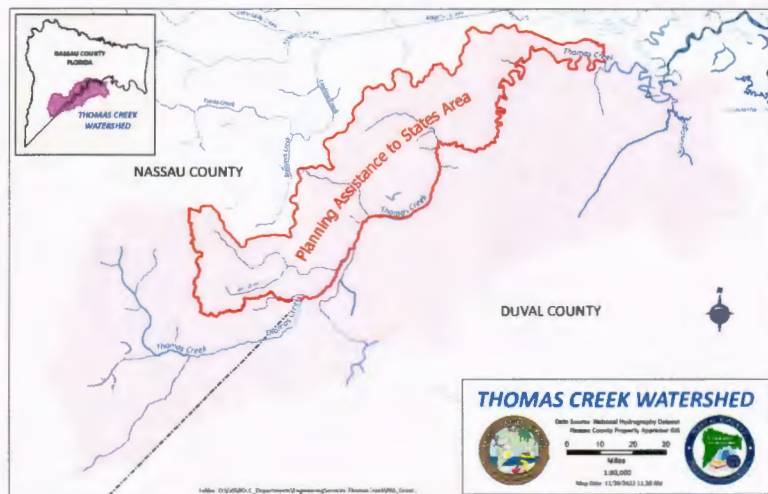


FIGURE 4 Area of Study

2. Background

■ Progress in the Thomas Creek Watershed up to the Implementation Plan

2.1 History

Thomas Creek's history is riddled with localized and riverine flooding concerns. The high fines or clay soils contribute to slow recovery from rain events unlike other parts of the county. The lower elevations coupled with the conjoining watersheds exacerbate the flooding. Storms like Hurricane Easy in 1950 dropped 10 inches in the area. Another unnamed storm in 1974 had significant recorded damage. Tropical Storm Josephine from 1996 is remembered by the community due to its flood impacts. With more recent events, Nassau County Engineering reviewed post storm models and the findings can be found in 2.2.1 below.

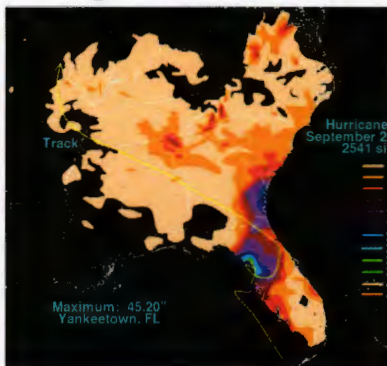


FIGURE 5 Path Hurricane Easy

[Hurricane Easy NOAA](#)

[Josephine NOAA](#)

2.2 Past Initiatives

Water rise from the Creek has been problematic for decades and impacts homes and structures in the surrounding areas. Despite spending approximately \$3.3 million in County and Federal funding to de-snag approximately 6 miles of the creek,

property owners continue to experience flooding to their properties and homes.

During previous de-snagging projects, environmental permitting would not allow trees along the bank to be cut down, regardless of whether they appeared to be in danger of falling, nor would they let the County do any work that would affect the bottom or sides of the bank. Therefore, the County knew that de-snagging would be a temporary solution and that they would need the Army Corps help in obtaining a permanent solution. Furthermore, entities such as the Army Corps would not permit desnagging, which was considered unsustainable, without a study to show a permanent solution.



FIGURE 6 Removed debris from Thomas Creek

In November 2017, Commissioner Justin Taylor and members of the County Engineering staff met with representatives of the Army Corps of Engineers, Senator Aaron Bean, and State Representative Cord Byrd to discuss other possible solutions. It was discovered at that time that there are programs available under the Army Corps of Engineers' Continuing Authority Program (CAP).

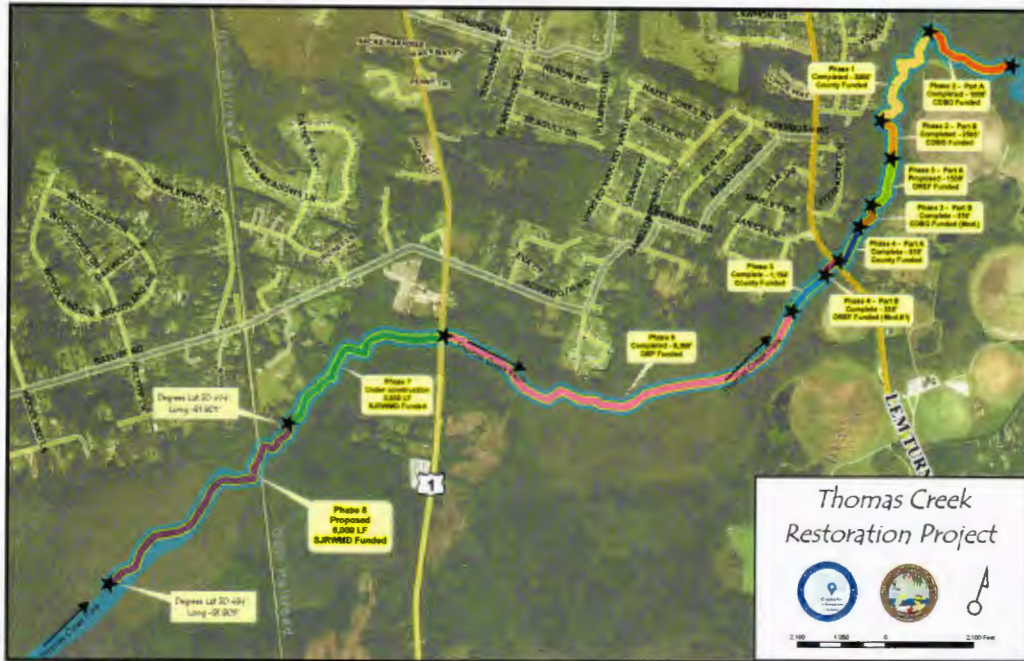


FIGURE 7 Phasing of Desnagging Project

Subsequently, the Board sent a letter to the Army Corps of Engineers requesting an investigation of the problems under the authority of Section 205 of the Flood Control Act of 1948. The letter was signed at the December 11, 2017, meeting of the Nassau County Board of County Commissioners (BOCC)

In April 2018, the County was notified that the project would exceed the limitation of the CAP Program and was recommended to seek a Planning Assistance to States (PAS) Study to help the County identify solutions to resolve the flooding issues. The study began in 2019. It is important to note the study provides a recommendation on addressing the flooding issues, but not a detailed design and implementation plan for work to be done.

2.2.1 Past Study Findings

The County has taken several important steps to implement the County’s vision for its drainage in the Thomas Creek Basin.

In 2009, following Tropical Storm Fay, CDM Smith was hired to model the storm event and a 25-year storm for comparison.

The CDM Smith Report allowed for drainage initiatives in the area including accepting drainage easements in Woodland Estates and cleaning out under the CSX railroad trestle.

Desnagging Initiatives started in fiscal year (FY) 2010/2011 with phase 1 at the junction of Funk’s Creek. This was a 3.3-million-dollar project with multiple grant partners. Desnagging efforts ended in 2019. The USACE will not permit additional desnag work until a sustainable solution is found.

Location	HEC-RAS Section	HEC-RAS Reach	Peak Water Elevations (ft NGVD)		
			Measured TS Fay	Modeled TS Fay	Modeled 25-year storm
43001 Freedom	21.606	Ben	17	16.27	16.27
43136 Pineridge	56.7419	Thomas	18.53	15.79	15.61
53007 Hollow Creek	43.015	Thomas	12.01	11.8	12.05
54317 Four Acres Circle	41.029	Thomas	10.65	10.62	11.32
54246 Lee Stoner Road	39.4	Thomas	10.8	9.91	10.97
54188 Vontz Circle	38.885	Thomas	9.88	9.68	10.88

FIGURE 8 CDM Smith Report Findings

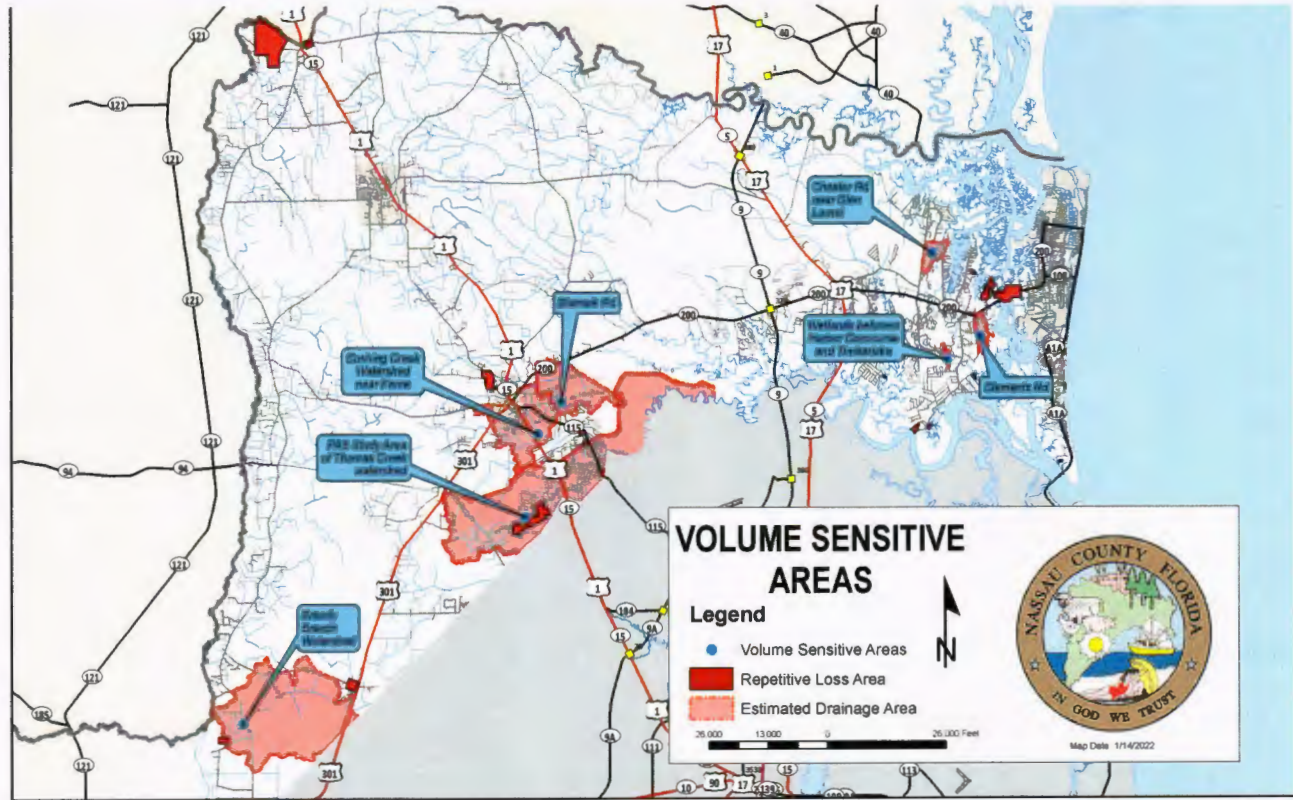


FIGURE 9 Adapted Volume Sensitive Map

2.3. Code Updates

During the October 2020 Board of County Commission Meeting Engineering Staff was given a directive to update the stormwater codes to include ways to mitigate future drainage concerns caused by lack of whole basin review.

Staff gathered a panel of local experts in their field and met a total of five times during the year to discuss code changes. Below is a list and their titles at the time the meetings were conducted.

A summary of the changes can be found in the appendix, but notable for Thomas Creek is the approval of the basin as a Volume Sensitive Area. This map was approved with the changes to the Code and implemented in May of 2022.

Stormwater Advisory Committee

Robert Companion

NC County Engineer

Katie Peay

NC Senior Stormwater Engineer

Gabriel Porter

NC DRC Engineer

Beth Leaptrott

Connelly and Wicker Engineer

Andre Desilet

City of Fernandina Engineer

Dr. Chris Brown

Professor UNF of Water Resources and Civil Engineering

Rocky Thompson and Everett Frye

SJRWMD Permitting and Engineering

Mike Molkenbur

Peter's and Yaffee Hydraulic Engineer

Merrill Varn

St. Mary's River Keeper Member

Ki Hong Pak

Gemini Engineering former FEMA Employee

2.4. Community Involvement

On August 5, 2022 Staff held a community meeting at the Mickler Street County Building in Callahan to present the findings of the PAS study. Over 40 citizens attended along with commissioners, County staff from multiple departments, Saint John's River Water Management District (SJRWMD), and Ocean's Highway and Port Authority.

The meeting presented property owners along Thomas Creek an option for the County to pursue grants to either purchase their land or modify their livable structures on the property. Staff also wanted to determine the property owner's that currently hold FEMA flood insurance because that would dictate eligibility to certain grant funding eligibility.

The Community asked for the County to attempt to permit the dredging of Thomas Creek despite model results showing no benefit from dredging. This prompted staff to have a Pre-Application Meeting with the permitting department of the Army Corps of Engineers, Jacksonville (USACE).

Many citizens in attendance offered tours of their yard to show the debris within the stream. Staff set up those meetings as well as reached out to the CSX Rail Master for physical site visits. It was also mentioned to research Ducky Recovery, Ducky Johnson, a firm specializing in home modifications to increase community resiliency from storm events.



FIGURE 10 Community Meeting

County Staff gathered the contact information from all citizens interested in the process to provide updates and additional information as it becomes available. Since the meeting those citizens interested in the County's proposal have created a Facebook page to share information amongst themselves. It was suggested at the meeting to continue all meeting notices as a mail out to the individual homes in the area.

2.4.1 Railroad (CSX) Maintenance

In October of 2022, at the request of County Staff, CSX cleared the ballast accumulation under the bridge to restore the area back to the original design.



FIGURE 11 (Left) before clearing (right) After clearing CSX Bridge ballast

2.4.2. Permits for Dredging

The County started the permitting process for dredging at the request of the citizens. Dredging requires permission through several state and federal agencies. The Environmental Protection Agency (EPA), under Section 404 of the Clean Water Act requires a permit to dredge materials into the waters of the United States. The County is currently on the second round of request for information during the 404-permit application process.

A pre application meeting was held on August 9, 2022, and the original permit application was submitted shortly thereafter. Staff also met with the Florida Department of Protection (FDEP) on Monday, September 19, 2022 to discuss their permitting requirements.

Major discussion items included wetland impacts and environmental concerns. A submitted application will allow ACOE to review the project for intent. Permit allowance hinges on the project successfully meeting the intent of the work. It's imperative the scope of work on Thomas Creek be in the public interest which compares environmental impacts to community's benefits.

The permitting agencies have made it clear that the intent of the permit can only be for navigability since the current models do not show dredging improves structural flooding.

2.4.3 Vegetation Management

Facilities Maintenance has agreed to spray the excess vegetation around US-1. This will allow for boat navigation, a chief complaint at the community meeting. This is estimated to cost \$300/ per application once a year to mitigate. This will be budgeted for twice annually but may need to be treated as growth restricts navigation.



FIGURE 12 US-1 Vegetation Concerns

2.5 Drainage Maintenance

Thomas Creek keeps the Nassau County Road Department busy with work orders and ongoing projects. As noted in the PAS Study, the majority of flood concerns come from this area of the County. Staff has been assigned to specific nuisance localized drainage concerns within Thomas Creek.

2.5.1 Road Department Projects

In the past several months, the ditch along Dornbush and Church has been cleared to allow unrestricted water flow in the easements.



FIGURE 13 New ditch cleared behind Dornbush Rd

2.5.2. Spring Lake Estates

Spring Lake Estates is a Subdivision within the Thomas Creek watershed, but outside of the PAS Study boundaries. The Stormwater and Drainage Department advertised an Invitation to Bid to Contractors interested in the mass regrade project including resetting driveways to restore the engineered design. The County will also clear out the drainage easements between lots to improve positive flow into the stormwater ponds.

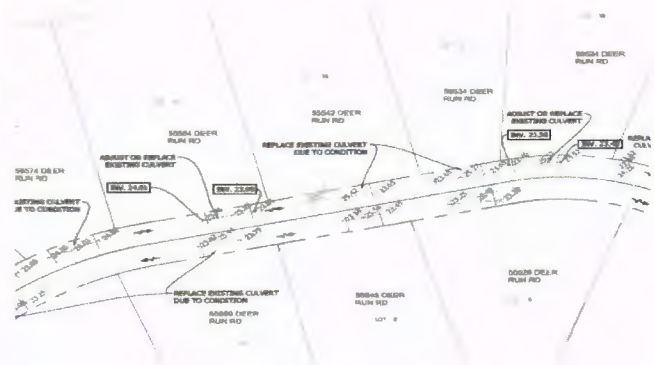


FIGURE 14 Excerpt of Spring Lake Estates Construction Plans

2.5.3 University of North Florida Woodland Estates Study

A group of University of North Florida's (UNF) Senior Students in the Fall 2022 Design Course chose Woodland Estates drainage review and retrofit for their capstone project. The group will review the drainage and make recommendation based on engineering expertise. The report deliverables will include recommendations for drainage upgrades and HEC-RAS model.

2.6 Floodplain Flood Insurance Rate Map Panel Updates

Special Flood Hazard Areas (SFHA) regulate building elevations per ordinance. In the Thomas Creek Watershed the flood insurance rate map (FIRM) panels have been updated twice since the County entered into the FEMA Insurance program. The Thomas Creek basin on the Nassau County side is defined as an A zone. This means there are no detailed analyses approved by FEMA to define the base flood elevations in the area. On the Duval side, the floodplain and floodway have been delineated with elevations. While staff can use this information to determine the Base Flood Elevation (BFE), it is harder for citizens to know their requirements until further into the building process. Updating the FIRM panel maps will help homeowners reduce flood risks.

To update the FIRM Panels in the area FEMA has a few processes for the community to follow through the application process. A LOMR, or Letter of Map Revision, can be submitted as an MT2 Application to FEMA. If the County is interested in having more control over the FEMA regulatory maps, there are other programs to work through with FEMA as a Cooperating Technical Partner (CTP).

LOMR's submittal fee is free to submit with the LOMC tool online in accordance with section 72.5 of the National Flood Insurance Program (NFIP) for map changes based on detailed hydrologic and hydraulic studies conducted by federal, state or local agencies to replace approximate studies conducted by FEMA and shown on the effective Flood Insurance Rate Map (FIRM).

[LOMR LINK](#)



FIGURE 15 FEMA FIRM Panel for Nassau County

2.7 Community Rating System (CRS)

On the momentum of the Community Rating Systems Audit ranks Nassau County at a seven (7). The Stormwater and Drainage Director and the current CRS coordinator are looking at ways to lower the rank and increase the discount.

The most promising initiative is the stormwater modeling of watersheds. This is a prerequisite to reach rank 4. The process will review the current level of service of existing stormwater system for water quality, quantity, and flood risk. The Hydrologic and Hydraulic models will identify and prioritize problem areas. The models will consist of a comprehensive basin by basin analysis of the existing and proposed stormwater systems, and how they react to different boundary conditions.

This analysis along with the Vulnerability Study performed by the Balmoral Group should give staff metrics to develop effective alternatives to handle the stormwater deficiencies from the outputs.

2.8 Thomas Creek Rain Gage

[Rain Gage Website](#)



FIGURE 16 Sensor Box at Lem Turner Bridge

During the modeling process of the Thomas Creek watershed, lack of data became apparent. The closest calibrated rain gage is located at the Jacksonville Airport. Staff worked with the USGS to obtain a stream gage that measures rainfall and stream height.

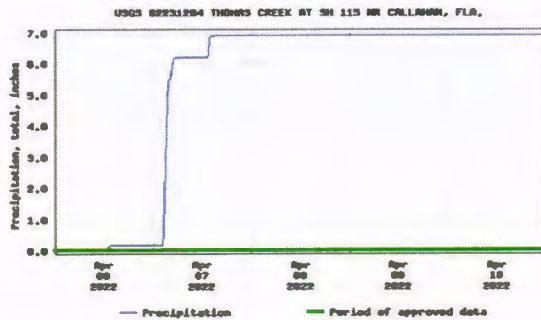


FIGURE 17 Rain Gage Chart on April 7, 2022

This data can be compared to the PAS model to ensure the creek is functioning similar to the model outputs.

Staff can then predict risks of upcoming storm events based on the model and gage information. Basin by basin analysis of the existing and proposed stormwater systems, and how they react to different boundary conditions.

2.9 Stormwater and Drainage Department

The Board of County Commissioners approved in fiscal year 22/23 a Stormwater and Drainage Department. This department's first goal is to map all the County stormwater infrastructure. From the completed project, staff can find the critical infrastructure that needs to be more resilient.

The Stormwater and Drainage Department will also provide review and inspections as needs for lot grading. The Department will also review drainage concerns and provide solutions as available.

The Stormwater and Drainage Department will also review sites with the Development Review Process ensuring compliance with all new and current code changes.

3. Planning Assistance to States Study Findings

- Land Acquisition only successful Mitigation Option to meet intent of the study.

3.1 Results Summary

The final PAS report is found in Appendix A of this plan. In summary, no structural management options solved the 100-year storm event flooding concerns. The 10-year storm was mitigated between US-115 and US-1 with a hefty price tag. Moreover, it did not encompass the biggest repetitive loss concern areas.

Multiple scenarios were modeled, including dredging the creek, adding a berm along the Nassau County side, adding retention ponds to increase storage area, adding a floodwall, adding pumps with a floodwall and increasing the conveyance capacity under the CSX railroad crossing by widening the channel.

The Army Corps of Engineers study of Thomas Creek is instrumental in showing the structural solutions would be expensive and limited in effectiveness. This means nothing could be built to lower flood waters. This verified pursuing land acquisition, and home modifications as the best options. Home modifications usually means raising the primary structure above the modeled Base Flood Elevations (BFE) in the area. In some cases, it could mean relocating the structure on the property to higher ground. The Road Map in this Implementation Plan will outline the process of the non structural scenarios to alleviate the life safety concerns and structural damages in the area.

The two alternatives chosen to best solve the repetitive flooding in the Thomas Creek drainage basin are home modifications or land acquisition.

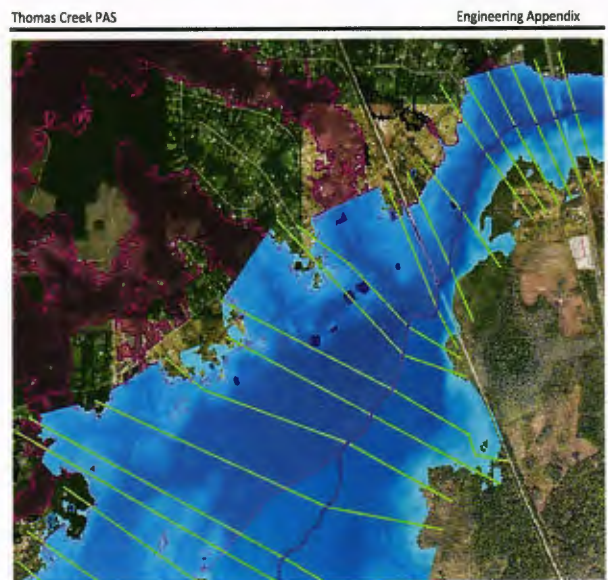


Figure 6-7. Thomas Creek 1D model 1% AEP Storm Maximum Water Surface (blue) Approximately Matched with FEMA Zone A (purple lines)

FIGURE 18 Base Flood Map

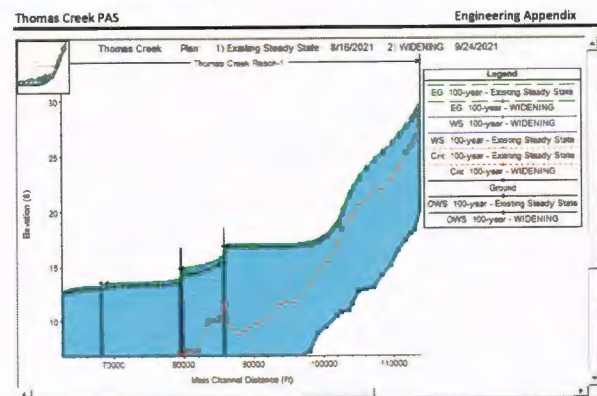


Figure 5-8. Proposed Alternative Did Not Improve Flooding at Thomas Creek Compared to Existing Conditions Under a 1% AEP Storm Event

FIGURE 19 Flooding Comparison

3.2. Land Acquisition

The first alternative is to buyout and acquire parcels of land on a volunteer basis in the Thomas Creek drainage basin that are prone to repetitive flooding. Buyouts include demolition of any structures on the parcels, debris removal, removal of underground improvement (e.g., septic tanks), removal of utilities, site grading and permitting. The conditions set forth from FEMA to buyout or acquire parcels of land require the attained land to become open space in perpetuity. Acquisition and demolition of structures in the Thomas Creek drainage basin are intended to reduce flood risks to people and structures.

Buyouts will occur in phases and will take several years to complete. Buyouts will be based on funding availability and will prioritize properties based on vulnerability. Section 4.4 provides the ranking system. The buyout option is available for parcels owned by property owners willing to sell their property.

The ranking system is based on weighted score. This break down can be found in Section 4. Houses ranked with the same score will be prioritized based on FEMA’s risk assessment including elevation certificates and number of flood claims.

3.3. Structure Modification

Another alternative to Land Acquisition is structure modifications to homes. This option includes raising structures above the base flood elevation, removing the structure from the special flood hazard area, or flood proofing commercial buildings. Nassau County can apply for Flood Mitigation Assistance Program (FMA) through FEMA on behalf of the homeowners. FEMA will pay 75% of a home’s modification cost. FEMA may contribute more based on their claim history, but the homeowner would be reimbursed after grant approval.

Homeowners with substantially damaged or repetitively damaged homes can also apply for the ICC grant that will reimburse \$30,000 of the project. This helps offset the costs to bring a home into compliance with local floodplain management ordinances and regulations.

Once priority homes have been awarded grant money. The Board may consider funds to cover the additional 25% the homeowner is responsible for during future grant cycles.



FIGURE 20: FEMA depiction of Land Conservation

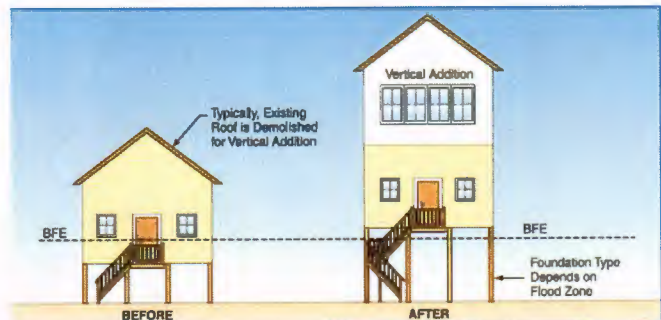


Figure 6-10. Vertical addition to a pre-FIRM residential building (in any zone) – the proposed work is a new upper story that involves structural modification. The work is a substantial improvement. The building is elevated to or above the BFE on a compliant foundation.

FIGURE 21: FEMA depiction of a Structure modification

3.4. Potential Funding Sources

3.4.1 Grants

Grants are the most economical option for the citizens of Nassau County. There are several Private, Local, State, and Federal groups offering funds based on their entities mission. Details of specific grants will be outlined in the coalition’s partners and road map portion of this implementation plan.

Competition can be steep depending on the metrics of the grant’s goals. Land Acquisition does not score high as far as innovation but will for flood protection. Grants can fund up to 100% of the project, but most will require some funds from the applicant. Depending on the grant’s specifications, funds may be awarded with a combination of grants.

3.4.2 Conservation Land Acquisition and Management (CLAM)

In 2020 Nassau County was behind the state’s average for counties in terms of natural resource protections, having only preserved 7% of their landmass, as compared to a statewide average of 29%.

Nassau County is also facing new and significant development threats, transforming from a mostly rural county to a growth center in the Northeast Florida region. However, the County has a bounty of healthy natural resources, including wild and scenic rivers like the St. Marys, Nassau, and Bells Rivers, a unique barrier island, and boundless miles of forestland. The County Commission directed Staff to develop a plan to conserve and manage conservation lands. This plan was developed by County Staff with the assistance of the North Florida Land Trust (NFLT), a 501(c) non-profit operating in Nassau County and throughout North Florida. NFLT was retained by the County to assist in the identification and acquisition of conservation resources creating a county wide Conservation Lands Acquisition and Management (CLAM) program. A CLAM Committee ranked the land prospects.

At the August CLAM meeting, the committee ranked Thomas Creek project be included in the list at nineteen (19) which is in the top 25 priority projects.

A bond referendum specifically for funding the CLAM was approved during the November 2022 elections.

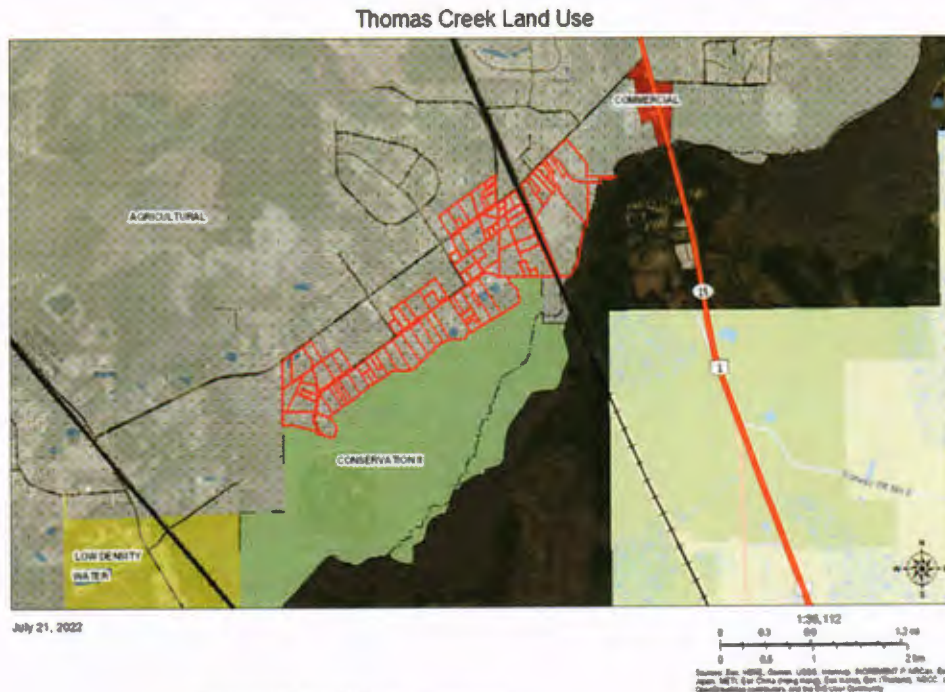
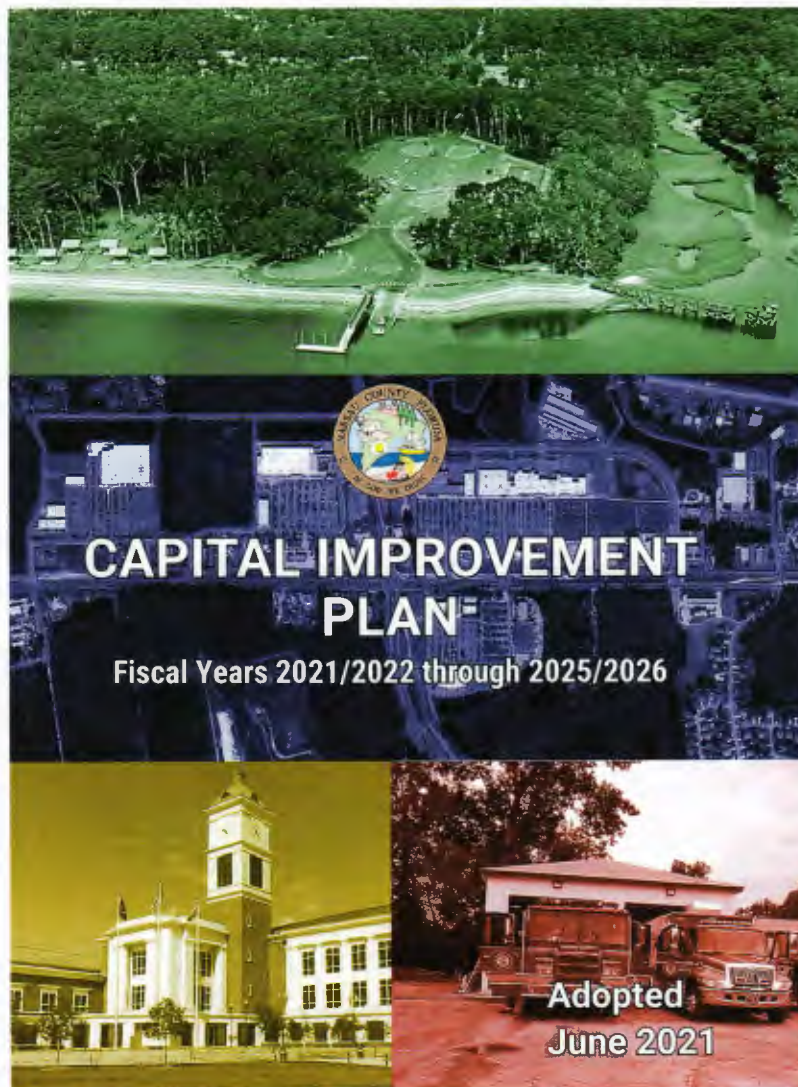


FIGURE 22 CLAM MAP for Thomas Creek

3.4.3. Capital Improvement Projects (CIP)

Capital improvements are the building, upgrading, or replacement of County infrastructure, such as roadways, bridges, traffic signals, public safety facilities, storm drain systems and drainage channels, parks, and other public facilities. The County's current policy defines capital expenditures as those made to acquire or add to general fixed assets items with a valued at least \$750 and a useful life of two or more years. Capital projects are those exceeding \$50,000 and a useful life of 5 years or more, or addition of major motorized equipment.

CIP projects are proposed to be added to the year plan each fiscal year and approved by the Board of County Commissioners. These approved projects are usually five years out depending on need and cost. There is also a midyear update.



3.5 Coalition Partners

The following are a compiled list of the partners able to execute , fund and support the Implementation Plan.

3.5.1. Nassau County’s Local Mitigation Task Force (LMS)

Bridgette Carrillo
Emergency Management
District 2
(850) 815-4316
Bridgette.Carrillo@em.myflorida.com

Mark L. Wilson
Planner
Nassau County Emergency Management
mlwilson@nassauso.com
Office: 904-548-0943
Cell: 904-583-5687

The Local Mitigation Strategy (LMS) are local government groups that assess risk and vulnerabilities and implement projects that reduce those hazards. FEMA requires local governments to develop and adopt such hazard mitigation plans as a condition for receiving certain types of non-emergency disaster assistance, including funding for mitigation projects.

Mark Wilson represents Nassau County in this group and maintains the project list to keep projects eligible for funding. Our state contact is Bridgette Carrillo.



3.5.2. Federal Emergency Management Agency (FEMA)

- “The Federal Emergency Management Agency (FEMA) employs more than 20,000 people nationwide. Headquartered in Washington, D.C., comprised of ten (10) regional offices located across the country. FEMA leverages a tremendous capacity to coordinate within the federal government to make sure America is equipped to prepare for and respond to disasters.” Florida is in region 4 of FEMA and works with the state liaisons.

Conn H. Cole, MBA/PA, CFM
 Florida NFIP State Coordinator
 State Floodplain Manager
 State Floodplain Management Office
 Florida Division of Emergency Management
 (850) 815-4507 Desk
 (850) 509-1813 Cell
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Mr. Armani M. Arellano, CFM
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3.5.2.1 Grants Available

Federal Emergency Management Agency (FEMA) grants are the most accessible and common for local governments to apply for to mitigate hazards. These grants include Preparedness, Hazard Mitigation, Emergency Food and Shelter, Next Generation Warning System, and Resilience. For Thomas Creek, Nassau County is actively seeking the FMA and eventually the BRIC grants.

3.5.2.1.1 Flood Mitigation Assistance (FMA)

Grant	Match	Contingency	Cycle Time
\$160 Million	At least 25% local	FEMA Insurance Required	Open October

As mentioned in Section 3, FMA grants can assist in 100% land acquisitions of severely repetitive loss homes or more commonly 75% of the cost. FMA grants will also help modify structures, such as raise them on the property.

<https://www.fema.gov/grants/mitigation/floods/learn-more>



FEMA

3.5.2.1.2 Building Resilient Infrastructure and Communities (BRIC) previously HGMP

Grant	Match	Contingency	Cycle Time
\$2.3 Billion	25% Local	FEMA Insurance Re-quired	Open October

The Hazard Mitigation Grant Program (HGMP) has transitioned to the Building Resilient Infrastructure and Communities (BRIC) Program. While land acquisition does meet the standards for this program, FEMA has been vocal that these projects will not score competitively. BRIC may be used in the future for flood protection measures with nature-based solutions. This would include funding to restore the wetlands and floodplain in the acquired land for flood storage.



3.5.3. United States Department of Housing and Urban Development (HUD)

- Established in 1937, this division of the Federal Government focuses on affordable housing. Nassau County will use the Emergency Management Connection or other block grants to take advantage of HUD grants for the Thomas Creek area.

3.5.3.1 Grants Available

Community Development Block Grant Disaster Recovery (CDBG-DR) Assistance could be an option for this area. The overview from the HUD website describes this program as, "Disaster Recovery grants to rebuild the affected areas and provide crucial seed money to start the recovery process. These flexible grants help cities, counties, and states recover from Presidentially declared disasters, especially in low-income areas, subject to availability of supplemental appropriations. Since CDBG Disaster Recovery (CDBG-DR) assistance may fund a broad range of recovery activities, HUD can help communities and neighborhoods that otherwise might not recover due to limited resources."

This grant is for any activities that increase resilience to disasters and rescue or eliminate the long-term risk of loss of life or injury.

CDBG-DR funds cannot duplicate funding available from federal, state or local governments, private and non-profit organizations, insurance proceeds, or any other source of assistance. CDBG-DR funds may also be used to match other federal resources and can also be used in combination with the Department of Health and Human Services (HHS) Social Services Block Grants (SSBGs)

https://www.hud.gov/program_offices/comm_planning/cdbg

Grant	Match	Contingency	Cycle Time
\$160 Million	At least 25% local	FEMA Insurance Required	Open October



FEMA

3.5.4. Florida Department of Environmental Protection (FDEP)

- The Florida Department of Environmental Protection protects, conserves and manages the state’s natural resources and enforces its environmental laws per its mission statement. This department of the state will be responsible for some of the 404 permitting depending on where in Thomas Creek the project is located. Please see 2.4.2 for more information.

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<https://floridadep.gov/rcp>

3.5.4.1 Grants Available

3.5.4.1.1 Resilient Florida

In May of 2021, Governor DeSantis signed Senate Bill 1954 into law for Florida’s coastal and inland resiliency. This bill allowed for two grants, Planning and Implementation for flood control, sea level rise, and vulnerabilities.

The Nassau County Planning Department applied for Planning Funds in the FY21-22 to meet the mandated Vulnerability Assessment Requirements. Engineering Services, now the Stormwater Department added a task to this grant to include asset collection in the Thomas Creek Watershed.

Once the Implementation Plan opened, Stormwater staff also applied for Acquisition of Property’s on the South side of Freedom Drive.

<https://floridadep.gov/Resilient-Florida-Program/Grants>

Grant	Match	Contingency	Cycle Time
\$640 million	0% Planning/ 50% Implementation	Vulnerability Assessment per 380.093 FS	Open July 1

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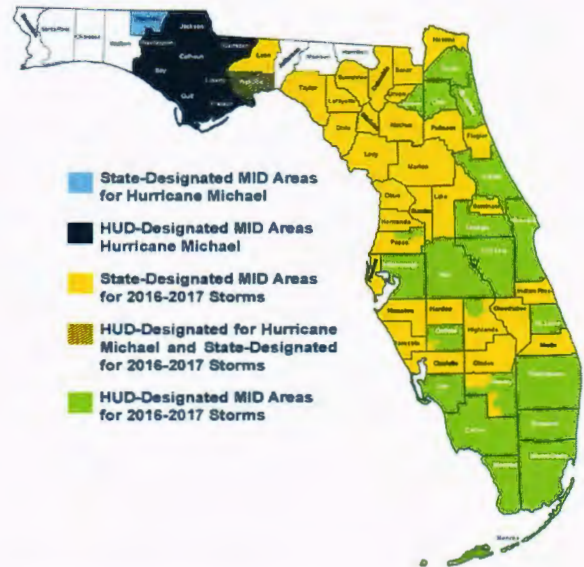


3.5.4.1.2 Rebuild Florida

Rebuild Florida was created by the Florida Department of Economic Opportunity for long-term recovery efforts for Irma and Michael Hurricanes. These funds are available through HUD’s Community Development Block Grant mentioned above. This Fiscal year prioritized low to moderate income families in 12 Counties that were not within Nassau County.

<https://michael.rebuildflorida.gov/>

Grant	Match	Contingency	Cycle
Michael	0% local	Designated MID areas	January 29th



3.5.4.1.3. Wastewater Grant Program

The Division of Water Restoration Assistance of the FDEP offers a Wastewater Grant Program. Priority will be given to projects that subsidize the connection of Onsite Sewage Treatment and Disposal System (OSTDS) to existing infrastructure.

Grant	Match	Contingency	Cycle
Wastewater Grant Program (WWGP) \$4 million Statewide	50% local	Septic to Sewer	Varies

3.5.5 St. John’s River Water Management District (SJRWMD)

- The mission of the St. Johns River Water Management District is “to protect our natural resources and support Florida’s growth by ensuring the sustainable use of Florida’s water for the benefit of the people of the District and the state.” SJRWMD reviews construction for Water Quality compliance. Nassau County will need to permit projects along Thomas Creek for their General Permits.

SJRWMD owns land along Thomas Creek with access roads to Thomas Creek Nassau County will need to utilize.

Douglas Conkey

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 Governmental Affairs Program
 St. Johns River Water Management District
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St. Johns River
 Water Management District

3.5.5.1. Grants Available

Rural Economic Development Initiative (REDI) program and cost-share program includes Flood Protection Projects that address flood protection issues on a local, intermediate, or regional scale. These funds are highly competitive. The district is always looking for innovative projects.

<https://www.sjrwmd.com/localgovernments/funding/redi/>

Grant	Match	Contingency	Cycle Time
Cost Share up to \$3 Million	75% Flood 50% Conservation	Ordinance Requirements	December 1

3.5.6 Natural Resource Conservation Service (NRCS)

- "NRCS delivers science-based soil information to help farmers, ranchers, foresters, and other land managers effectively manage, conserve, and appraise their most valuable investment — the soil" NRCS focuses on the farming community which is abundant in the Thomas Creek Watershed.

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3.5.6.1 Grants Available

Wetland Reserve Easement (WRE)/ Wetland Reserve Program (WRP)

The Wetlands Reserve Program (WRP), transitioning in 2014 to the Wetland Reserve Easements program or "WRE" is a voluntary program that provides technical and financial assistance to private landowners to restore, enhance, and protect wetlands through the purchase of wetland reserve easements. Three options include, Permanent Easement, 30-year Easement, and Restoration Cost-Share. The Permanent easement is a 100% paid for by the USDA. The 30-year easement and restoration cost share is up to 75% is paid for by the USDA to re-establish degraded or lost wetland habitat. Can be combined with other organizations assistance. Sites ineligible include timber lands under CRP contracts, federal lands, and wetlands concerted after December 23, 1985. Homeowner must have ownership of property for 24 months to apply.

Grant	Match	Contingency	Cycle Time
Easement Program	Up to 100%	Agricultural	Always Open

3.5.7 Southeast & Caribbean Disaster Resilience Partnership (SCDRP)

- This coalition has been a gold mine of information regarding grants, studies, and active projects happening within the Southeast. Staff keeps their zoom meetings on the calendar to listen into all the initiatives and opportunities available. The emails sent out usually give the first notice of any resilience, flood, or other grant opportunities available for the region.

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**SOUTHEAST & CARIBBEAN
DISASTER RESILIENCE
PARTNERSHIP**

3.5.8 City of Jacksonville, Duval County

- Nassau County will need permission from Duval County for any projects within Thomas Creek’s waters since it’s shared waters.

Robin G. Smith, P.E.

City Engineer
Chief of Engineering & Construction
City of Jacksonville
Department of Public Works
214 N. Hogan Street, Jacksonville, FL 32202
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3.5.9 National Fish and Wildlife Foundation (NFWF)

- NFWF is private, independent 501(c)(3) nonprofit organization created by Congress in 1984. Its goal is to build public-private partnerships to increase the funding our nation needs to advance the science and practice of conservation throughout the United States.

Zack Bernstein

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3.5.9.1 Grants Available

NFWF approval is paramount for recreational grants along Thomas Creek. Staff will need to meet environmental constraints to keep plants and wildlife are protected during any work done within the wetlands and Creek. The National Fish and Wildlife Foundation (NFWF) funds projects on a competitive basis to sustain, restore and enhance fish, wildlife and plants, and their habitats.

These numerous grants are usually area specific and species specific. The 2022 National Coastal Resilience Fund has \$140 million dollars available to create and restore natural systems in order to increase protection for communities from coastal hazards, such as storms, sea- and lake-level changes, inundation, and coastal erosion, while improving habitats for fish and wildlife species. NFWF prioritizes projects that are community led or incorporate direct community engagement and benefit under served communities facing disproportionate harm from climate impacts. Pre-proposals will be March of 2023 and full proposals will be by invite only.

<https://www.nfwf.org/grants/grants-library?page=0>

Grant	Match	Contingency	Cycle Time
Varies	Varies	Varies	Varies

3.5.10 City of Fernandina Beach

- The City of Fernandina’s partnership has benefited Nassau County by serving on the Ordinance review committee. Their Stormwater Utility Department and Community Rating System Program (CRS) keep staff up to today with local grant and learning opportunities. Some grants listed above can be multijurisdictional. Staff may reach out to the City for joint grant opportunities.

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3.5.11 CSX Railroad

- With CSX railroad crossing along Thomas Creek, staff needs to keep communication open with projects within their Right of Way.

Christopher Lucianai

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Cell: (904) 219-9101
Christopher_Luciani@csx.com



3.5.12 Florida Department of Transportation (FDOT)

- State roads cross near Thomas Creek. Staff needs to communicate with FDOT for projects within their Right of Way. Ferrovial currently holds the maintenance contract for any work orders that need to be addressed.

Dr. Richard M. Bame

District Maintenance
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Mobile: (904) 416-4373 .



4. Implementation

- Board decisions and grant awards will determine the flow of the path forward. The next few pages break down the pieces that need to be in place for the plan to be executed.

4.1 Process

The time frame for this implementation grants completion rests solely on the grant cycles and awarded funding. The plan will be considered completed once all voluntary buyouts have been pursued. Considering the Master List of homes at flood hazard risk within the PAS Study region, and estimated grant funding, it will take twenty (20 years) to effectively acquire the properties in question.



FIGURE 23 Thomas Creek during desnagging process

The process will include inquiries through certified mailers regarding interest. If we receive a signed receipt back and no communication from the property owner, this fulfills the County's solution to the flooding concerns in the area. Staff will ask and re-rank properties based on new data and voluntary participation. The non responses can be reassessed for new property owner's or on a five year review basis.

Preliminary findings through the community meeting and non-certified letter sent out shows low interest in the acquisition program. Fifteen property owners have responded in favor of the process.

Grants open annually and depending on the contract can be open for several years. Per the typical land acquisition process, homes take about 18 months to process. A typical grant contract is signed for fulfillment within three (3) years.

Once awarded the grant process will incur additional costs that need to be added to each home acquisition estimation. Per each land acquisition staff is adding an additional conservative \$30,000

4.4.1 Real Market Value Appraisal Pre meeting

In a preliminary meeting, staff met with an appraiser that mentioned Nassau County could opt to get an Area wide range for homes. For instance, mobile homes in the area are in this price range vs three-bedroom single family dwellings are in this price range.

Instead of the additional cost, since each individual home would also need a site-specific appraisal, staff took Nassau County’s Property Appraisals cost and added 20%. This has been successful for many Counties that have already been through this process. Also reviewed were local real estate websites markets with the current demanding market to see how the numbers compared.

4.4.2 Real Market Value of Property

Homeowners and the Board of County Commissioners will need to agree on the Real Market Value prior to closing in accordance to the grant requirements and state statues.

4.4.3 Demolition, Landfill, and Septic Cost

Staff has many options during the removal process. The Board can opt to remove items from the homes prior to demolition. It is possible that homeowners could remove their entire mobile home in some instances. The Board will need to make this decision based on the risk of mold and water damage exposure.

The closest construction landfill will take debris for \$48/ton or the County could opt to do haul dumpsters.

Septic removal will need to be bid out to a certified contractor. A local contractor stated abandonment is usually the way its handled. This includes pumping the system and crushing the tank. The permit must be pulled for the removal, but if it’s county land, the \$150 permit fee is waived.

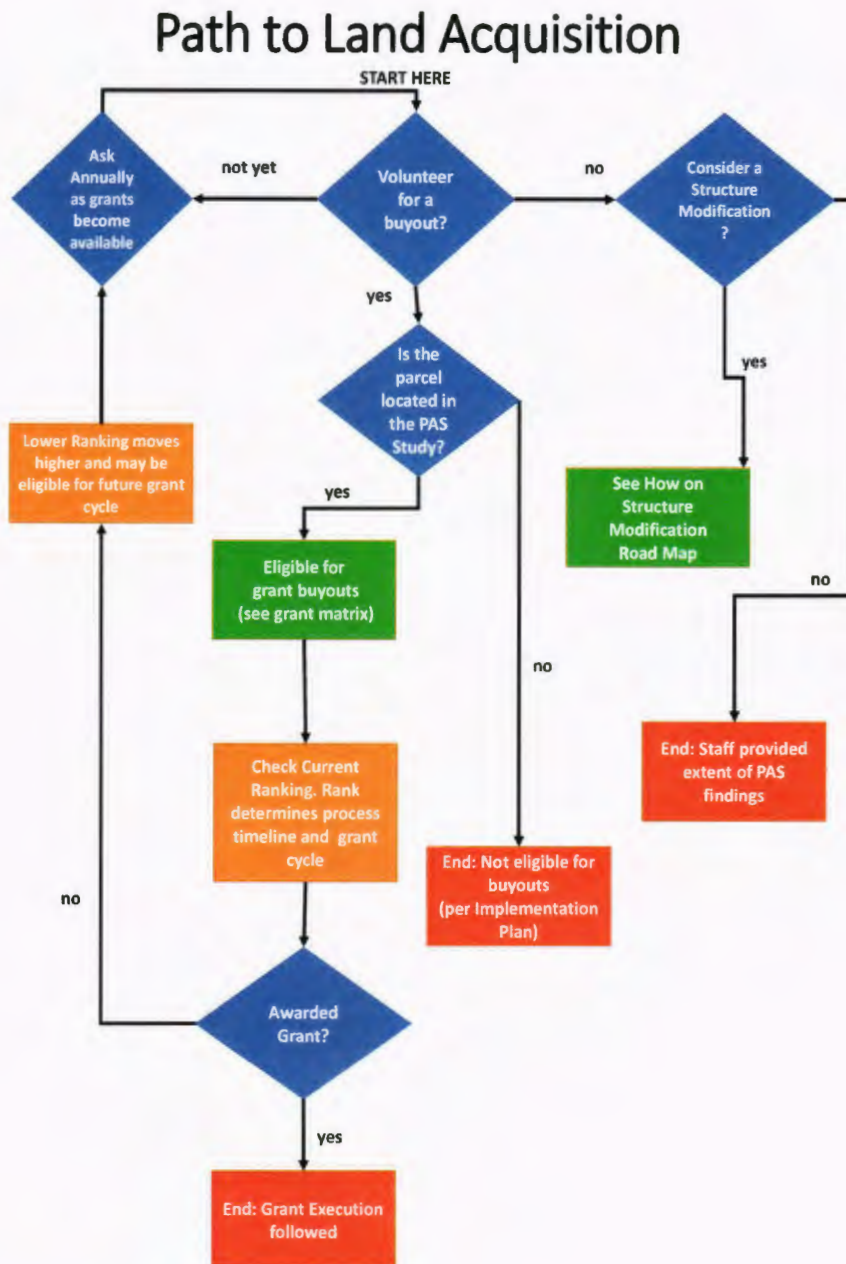
4.4.4 Stabilization

Staff will monitor the sites using Stormwater Best Management Practices. If sites show signs of erosion, hydroseeding can be laid down by the Nassau County Road Department.

Costs Per Land Acquisition	
Appraisal	\$4,000/ home
Real Market Value	\$75,000- \$600,000/ home
Demolition Cost	\$19,000/ depending on square foot
Landfill Fees	\$50/ton to haul or \$80/ton for dumpster
Septic Removal/ Abandonment Fees	\$3,000/ average
Stabilization Measures	\$.03/ Sq ft

4.2 Acquisition

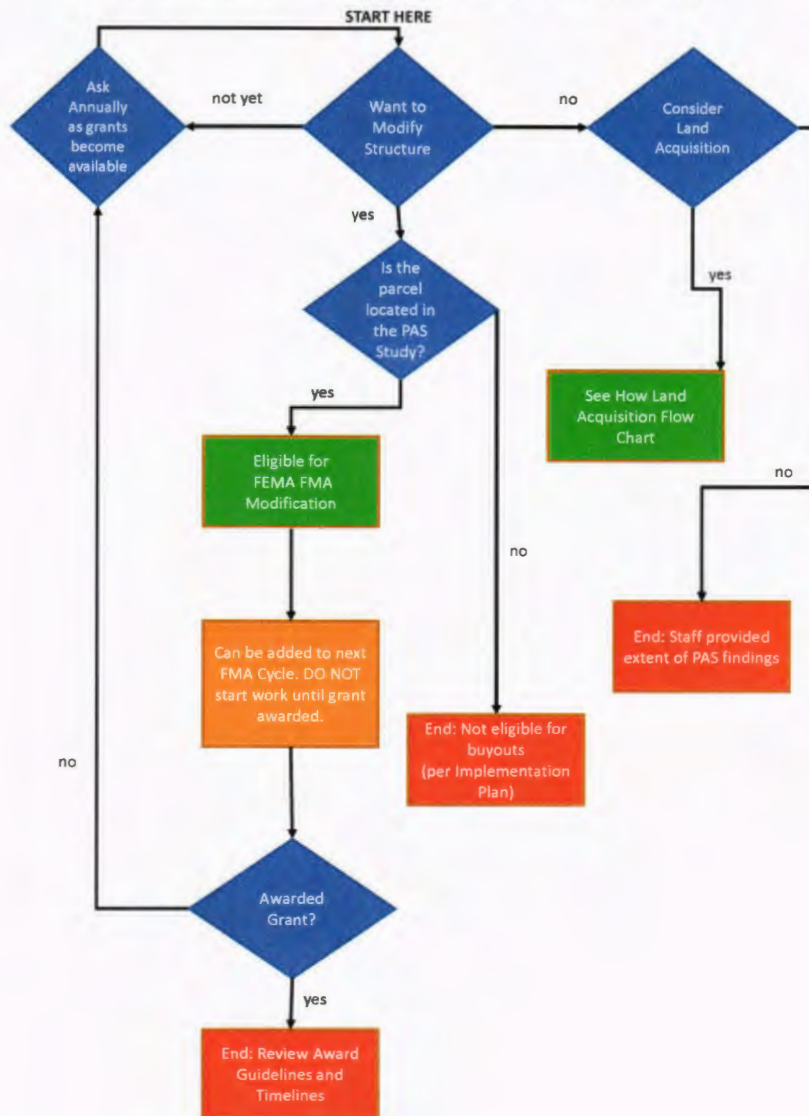
Below breaks down the flow of a homeowner interested in the Land Acquisition process. The FEMA graphic on page 19 breaks down the steps once a grant is award. The process should take around 18 months, but most grants contracts are open for three years for fulfilment.



4.3 Modification

Nassau County can submit for a modification grant through FEMA any time the cycle becomes open. Staff currently recommends applying for the grant on behalf of the homeowner as required by FEMA. For more information, see section 3.3 on page 14.

Path to Structure Modification



4.3 Next Funding Cycles

Below lists the most current grant cycle openings color coded by funding potential. Blue is funds allocated by the BOCC, State, or CLAM Committee. Orange are grants suitable for land acquisitions. Yellow are eligible grants for part of the process, including but not limited design or water quality projects.

CURRENT FUNDING APPLICABLE TO ACQUISITION

TYPE	FOR	AGENCY	NAME	COUNTY MATCH	CONTINGENCY
Bond	CONSERVATION	NASSAU	CLAM	100%	RANKING
General Fund	CONSERVATION	NASSAU	CIP	100%	Approved Candidate Project
Legislative Appropriations	CONSERVATION	STATE	STATE	up to 0%	Land Acquisition or Board Directive
Grant	RESILIENCE	FEMA	BRIC	25%	BCA over 1
Grant	HAZARD MITIGATION	HUD	CDBG-DR	up to 0%	Presidentially declared emergency/ low income houses
Grant	PLANNING RESILIENCE	FDEP	Resilient Florida	0%	Vulnerability Assessment 380.093, F.S
Grant	HAZARD MITIGATION	FEMA	FMA	25%	FEMA Insurance
Grant	IMPLEMENTING RESILIENCE	FDEP	Resilient Florida	50%	Vulnerability Assessment 380.093, F.S
Grant	WATER QUALITY	FDEP	WWGP	50%	Removal or Hook up of Septic to Sewer

4.4 Ranking Scores

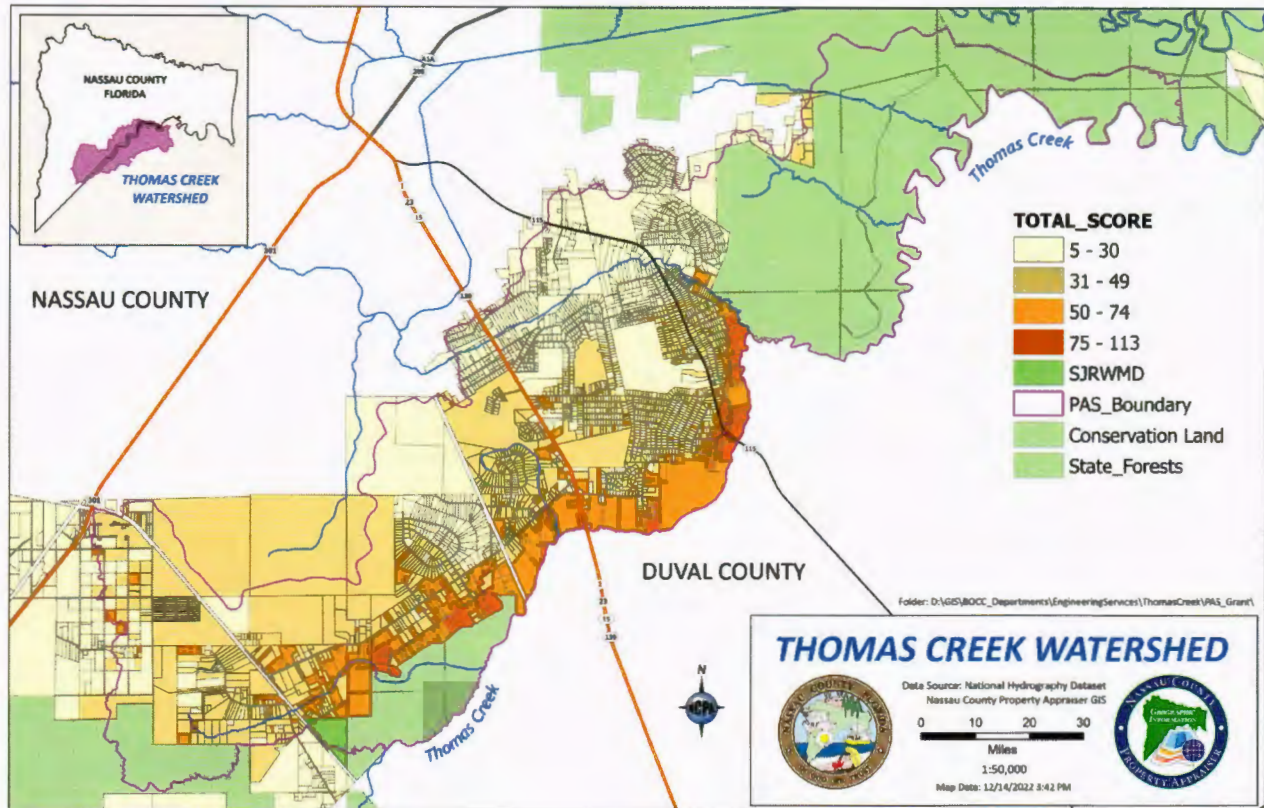
Ranking System			
<u>Resource Category</u>	<u>Resource Category Score Total</u>	<u>Data Layer</u>	<u>Data Layer Score</u>
<i>Model Study Area</i>	30		
		Within the Study Area	25
		Within Thomas Creek Watershed	5
<i>Parcel Location</i>	20		
		Within the 100 year	5
		Within the 10 year	10
		Along Thomas Creek or Ben Branch	5
<i>Structure Locations</i>	40		
		Primary Structure in 100 year	10
		Structures in 100 year	5
		Primary Structure in 10 year	15
		Structures in 10 year	8
		Elevation Certificate on File	2
		EC in compliance with current codes	-25
<i>Parcel Type</i>	50		
		Vacant	25
		Homestead	5
		Homeowner seeks funds solo	25
Total	140 points		

*tie breakers based on FEMA loss claims

Scores over 50 will be considered meeting the goals of the PAS Study, which is to remove the flood risk from structures for the 100 year storm event.

4.5 Map

Parcel Map shows land already in conservation in green Staff will rerank parcels annually based on citizen interest and awarded grants.



4.6 Recommendation Summary

County allocation will be decided on an annual basis, based on funding availability. The suggested amount of \$1 million per year would allow the County to seek up to an additional \$3 million in grants. Given the estimated cost of the average parcel in the area, funding could mitigate eight (8) home-owner's a year. While scores over 50 meet the intent of study, scores higher than 75 will be the most competitive for funds. This is around 120 parcels and will take 15 years to complete. Funds will focus on land acquisition for the first five year cycle of the plan. County should re-assess funding to divert portions of the funding to home structure modifications after five years.

5. Appendix

5.1 Code Changes

Current Issue	Section(s)	Desired Outcome	Proposed Updates / Language
Construction happening in floodplains without owner/builder understanding the consequences of changing waterflow or environmental sensitive areas.	10.2.2	A permit for non-DRC, non-building permit activities that may need State and Federal Permits	<p>Construction activities shall be reviewed and permitted with a Grading Permit. This includes single family dwellings.</p> <p><i>Construction:</i> Any activity which results in the modification of surface features, including but not limited to grading, or the placement or alteration of buildings, structures or utilities, unless specifically exempted by this or any other applicable Nassau County ordinance.</p>
As-built Clarification. Developers not using NC As-built Checklist	10.3.4	Clarification of As-built Requirements	<p>Projects meeting the requirements of section 10.3.3 above shall be required to submit a drainage plan meeting the requirements referenced in section 10.7, below and are subject to "As-Built" inspection and certification. This codifies existing policy</p>
Construction happening in floodplains without owner/builder understanding the consequences of changing waterflow or environmental sensitive areas.	10.2.2	A permit for non-DRC, non-building permit activities that may need State and Federal Permits	<p>Construction activities shall be reviewed and permitted with a Grading Permit. This includes single family dwellings.</p> <p><i>Construction:</i> Any activity which results in the modification of surface features, including but not limited to grading, or the placement or alteration of buildings, structures or utilities, unless specifically exempted by this or any other applicable Nassau County ordinance.</p>

<p>Maintenance of Stormwater System is unknown to responsible entity and not kept up.</p>	<p>10.4.2, 10.6.4 & 10.6.7.5</p>	<p>Create requirements for maintenance agreements for site plans and maintenance plans for all projects</p>	<p>10.4.2. Projects shall be required to designate the entity responsible for operation and maintenance prior to approval for construction.</p> <p>10.6.7.4 Maintenance plan required.</p> <p>10.6.7.5. shall submit a copy of any inspection reports the bi-annual report required by St. Johns River Water Management District to the engineering services department when requested.</p>
<p>Roadways subgrade fails if subjected to water for long periods of time</p>	<p>10.6.4.2.1.</p>	<p>Regulations to insure Best Design Practices are Utilized</p>	<p>10.6.5.2.1 All roadways shall have a 12-inch separation from the seasonal high groundwater table to the bottom of the stabilized subgrade of all roadways.</p>
<p>Sea Level Rise is mentioned in our Vulnerability Study</p>	<p>10.6.4.5.</p>	<p>Take Sea Level Rise into account for new development in tidally influenced areas</p>	<p>Systems discharging into tidal areas such as the Atlantic Ocean, the Intracoastal Waterway, the St. Mary's River and the Nassau River use the Mean High Tide elevation plus twenty-four (24) inches to account for sea level rise;</p>
<p>Staff has seen an increase in drainage problems arising from lack of maintenance and analysis of downstream infrastructure.</p>	<p>10.5.3</p>	<p>Increased review scope from a watershed perspective</p>	<p>10.5.3. Any improvements or increase in capacity of downstream facilities necessary to serve the project shall be the responsibility of the owner/applicant and shall be constructed in conjunction or prior to the project construction. Nassau County requires calculations to prove the downstream structures can adequately handle post development design flows. At the discretion of the County Engineer or their designee, upstream structures may need to be evaluated. Financial assurances meeting the requirements of Article 12 of this ordinance may be required prior to approval by Nassau County.</p>
<p>SJRWMD requirements need to match Regulation Language</p>	<p>10.6.1.4, 10.6.2.1., 10.6.2.2</p>	<p>Align with SJWMD</p>	<p>A geotechnical report from a licensed engineer or other professional authorized under the Florida Statutes...shall conform to the SJRWMD Environmental Resource Permit "Stormwater Quality Applicant's Handbook" most recently adopted version.</p>

			<p>Low Impact Development (LID) Designs are encouraged.</p> <p>a. The post-development rate of runoff for a development shall not exceed the predevelopment runoff rate for the 5-year, 10-year, Mean Annual, and 25-year storm events.</p>
Per BOCC direction, staff updated quality and quantity calculation requirements	10.6.3.1	Clarify requirements, build in a factor of safety, and match permit requirements currently in place	<p>b. The Post Development rate of runoff for volume sensitive sites or flood-prone areas shall provide detention of the 25-year discharge volume for developed conditions. Volume Sensitive sites or flood-prone areas shall be determined by Engineering Services.</p> <p>Retention / Detention areas shall be designed with sufficient hydraulic capacity for a 25-year storm event. The banks of pond must have the capacity for the 100-year storm event.</p>
Requirements are State requirements and standard practices.	10.6.3.3, 10.6.3.4.2.1 10.6.3.4., 10.6.7, 10.6.3.8. 10.6.5.1 10.6.7.2., 10.6.7.3	Clarity	Removed or clarified
Roadways subgrade fails if subjected to water for long periods of time	10.6.4.2.1.	Regulations to insure Best Design Practices are Utilized	10. 6.5.2.1 All roadways shall have a 12-inch separation from the seasonal high groundwater table to the bottom of the stabilized subgrade of all roadways.
Sea Level Rise is mentioned in our Vulnerability Study	10.6.4.5.	Take Sea Level Rise into account for new development in tidally influenced areas	Systems discharging into tidal areas such as the Atlantic Ocean, the Intracoastal Waterway, the St. Mary's River and the Nassau River use the Mean High Tide elevation plus twenty-four (24) inches to account for sea level rise;

<p>Staff has seen an increase in drainage problems arising from lack of maintenance and analysis of downstream infrastructure.</p>	<p>10.5.3</p>	<p>Increased review scope from a watershed perspective</p>	<p>10.5.3. Any improvements or increase in capacity of downstream facilities necessary to serve the project shall be the responsibility of the owner/applicant and shall be constructed in conjunction or prior to the project construction. Nassau County requires calculations to prove the downstream structures can adequately handle post development design flows. At the discretion of the County Engineer or their designee, upstream structures may need to be evaluated. Financial assurances meeting the requirements of Article 12 of this ordinance may be required prior to approval by Nassau County.</p>
<p>SJRWMD requirements need to match Regulation Language</p>	<p>10.6.1.4, 10.6.2.1., 10.6.2.2</p>	<p>Align with SJWMD</p>	<p>A geotechnical report from a licensed engineer or other professional authorized under the Florida Statutes...shall conform to the SJRWMD Environmental Resource Permit "Stormwater Quality Applicant's Handbook" most recently adopted version.</p>
<p>Per BOCC direction, staff updated quality and quantity calculation requirements</p>	<p>10.6.3.1</p>	<p>Clarify requirements, build in a factor of safety, and match permit requirements currently in place</p>	<p>Low Impact Development (LID) Designs are encouraged.</p> <p>c. The post-development rate of runoff for a development shall not exceed the predevelopment runoff rate for the 5-year, 10-year, Mean Annual, and 25-year storm events.</p> <p>d. The Post Development rate of runoff for volume sensitive sites or flood-prone areas shall provide detention of the 25-year discharge volume for developed conditions. Volume Sensitive sites or flood-prone areas shall be determined by Engineering Services.</p> <p>Retention / Detention areas shall be designed with sufficient hydraulic capacity for a 25-year storm event. The banks of pond must have the capacity for the 100-year storm event.</p>