# APPLICATION FOR CONCEPTUAL ENVIRONMENTAL RESOURCE PERMIT

# NORTH FORT MYERS SURFACE WATER MANAGEMENT PLAN LEE COUNTY, FLORIDA

PREPARED FOR:

LEE COUNTY 1500 MONROE STREET FORT MYERS, FL 33901

PREPARED BY:

AECOM

2090 PALM BEACH LAKES BLVD SUITE 600 WEST PALM BEACH, FL 33409 (561) 684-3375

OCTOBER 2010

# NFMSWMP ERP Conceptual Permit Application

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				FOR AG	ENCY US				
	ACOE Ap	plication # ication Received			DEP/Wi	/ID Application # _ plication Received	d :		
	Proposed	Project Lat.	□ N	0	Date 14p	Fee Received	<u></u>		
				~	\$	rp			
	Proposed	Project Long	_ON	_0	#	Fee Receipt			
				SE	CTIOI	N A			
⊠ yes	☐ no oplication	ivities described being filed by or						ls or other surface	waters?
Ĭ	Α.	Type of Enviror	nmental Res	source Pern	nit Requ	ested (check a	at least one)		
	<ul> <li>Noticed General - include information requested in Section B.</li> <li>Standard General (Single Family Dwelling)-include information requested in Sections C and D.</li> <li>Standard General (all other projects) - include information requested in Sections C and E.</li> <li>Individual (Single Family Dwelling) - include information requested in Sections C and D.</li> <li>Individual (all other projects) - include information requested in Sections C and E.</li> <li>Conceptual - include information requested in Sections C and E.</li> <li>Mitigation Bank Permit (construction) - include information requested in Section C and F.</li> <li>(If the proposed mitigation bank involves the construction of a surface water management system requiring another permit defined above, check the appropriate box and submit the information requested by the applicable section.)</li> <li>Mitigation Bank (conceptual) - include information requested in Section C and F.</li> </ul>								
	B.	Type of activity	for which yo	ou are appl	ying (che	eck at least on	e)		
		struction or oper urface waters.	ration of a ne	ew system	including	dredging or f	illing in, on or	over wetlands and	
	⊠ Alte	ration or operation	on of an exis	sting systen	n which	was not previo	ously permitted	l by a WMD or	
		dification of a sys	stem previou	ısly permitte	ed by a \	WMD or DEP.	Provide previo	ous permit	
	numbe	☐ Alteration of	f a system   n of addition				☐ Abandonm noval of a syst	ent of a system tem	
	C.	Are you reques (If yes include t	sting authoriz the informati	zation to us ion request	e State ( ed in Se	Owned Lands' ction G.)	? ☐ yes ⊠ n	0	
	D.	For activities in and fill permit re Individual General	equested:	ımmatic Ge	neral	urface waters, \pplicable	, check type of	federal dredge	
	E.	Are you claimir If yes provide r			nption?	□yes ⊠ no			

OWNER(S) OF LAND	ENTITY TO RECEIVE PERMIT (IF OTHER THAN OWNER)			
NAME Lee County Board of County Commissioners	NAME			
ADDRESS 1500 Monroe Street	ADDRESS			
CITY, STATE, ZIP Fort Myers, FL 33901	CITY, STATE, ZIP			
COMPANY AND TITLE Lee County Board of County Commissioners	COMPANY AND TITLE			
TELEPHONE (239) 533-2221 FAX (239) 485-2262	TELEPHONE ( ) FAX ( )			
AGENT AUTHORIZED TO SECURE PERMIT (IF AN AGENT IS USED)	CONSULTANT (IF DIFFERENT FROM AGENT)			
NAME	NAME Karen Brandon, P.E.			
COMPANY AND TITLE	COMPANY AND TITLE AECOM, Sr. Engineer			
ADDRESS	ADDRESS 2090 Palm Beach Lakes Blvd, Suite 600			
CITY, STATE, ZIP	CITY, STATE, ZIP West Palm Beach, FL 33409			
TELEPHONE ( ) FAX ( )	TELEPHONE (561) 684-3375 FAX (561) 689-8531			
Name of project, including phase if applicable Lee County - North Fort Myers Surface Water Management Plan  Is this application for part of a multi-phase project?  yes  no  Total applicant-owned area contiguous to the project N/A ac  Total project area for which a permit is sought 34 ac  Impervious area for which a permit is sought 0 ac  What is the total area (metric equivalent for federally funded projects) of work in, on, or over wetlands or other surface waters?  3.7 acres square feet hectares square meters  Number of new boat slips proposed. 0				
Project location (use additional sheets, if needed)  County(ies) Lee (see Attached Exhibit 1 for S/T/R)  Section(s) Township Range  Section(s) Township Range  Land Grant name, if applicable N/A  Tax Parcel Identification Number N/A  Street address, road, or other location N/A  City, Zip Code if applicable N/A				

Describe in general terms the proposed project, system, or activity. <u>The NFMVVSWP is a Waster</u>
Watershed Plan whose purpose was to map existing stormwater conveyance and control structures in
21 watersheds between US 41 and US 31 and identify the extent of roadway flooding along the main
creeks of the watersheds. Flood prone areas were identified and conceptual improvement projects
were proposed to reduce roadway flooding to acceptable Levels of Service as defined by the Lee Co.
Comprehensive Plan.
The proposed projects include culvert replacement and addition, raising roadway elevations at creek

The proposed projects include culvert replacement and addition, raising roadway elevations at creek crossings, conveyance improvements such as re-grading and widening ditches or swales, and creation of storage facilities such as ponds.

If there have been any pre-application meetings, including at the project site, with regulatory staff, please list the date(s), location(s), and names of key staff and project representatives. Pre-application Mtg at SFWMD on April 26, 2010. Attendees included: Clyde Dabbs, Steve Sentes and Laura Layman of SFWMD; Anura Karuna-Muni and Roland Ottolini of Lee County; Karen Brandon and Robert Garland of AECOM; A copy of the meeting summary is included as Exhibit 2.

Please identify by number any MSSW/Wetland resource/ERP/ACOE Permits pending, issued or denied for projects at the location, and any related enforcement actions.

Agency	Date	No.\Type of Application	Action Taken
N/A			

Note: The following information is required **only** for projects proposed to occur in, on or over wetlands that need a federal dredge and fill permit and/or authorization to use state owned submerged lands and is not necessary when applying solely for an Environmental Resource Permit. Please provide the names, addresses and zip codes of property owners whose property directly adjoins the project (excluding applicant). Please attach a plan view showing the owner's names and adjoining property lines. Attach additional sheets if necessary.

1.	N/A	2.
3.		4.

By signing this application form, I am applying, or I am applying on behalf of the applicant, for the permit and any proprietary authorizations identified above, according to the supporting data and other incidental information filed with this application. I am familiar with the information contained in this application and represent that such information is true, complete and accurate. I understand this is an application and not a permit, and that work prior to approval is a violation. I understand that this application and any permit issued or proprietary authorization issued pursuant thereto, does not relieve me of any obligation for obtaining any other required federal, state, water management district or local permit prior to commencement of construction. I agree, or I agree on behalf of my corporation, to operate and maintain the permitted system unless the permitting agency authorizes transfer of the permit to a responsible operation entity. I understand that knowingly making any false statement or representation in this application is a violation of Section 373.430, F.S. and 18 U.S.C. Section 1001.

Typed/Printed Name of Applicant (If no Agent is used) or Agent (If one is so authorized below)

Signature of Applicant/Agent	Date
(Corporate Title if applicable)	
AN AGENT MAY SIGN ABOVE ONLY IF THE APPLICANT	COMPLETES THE FOLLOWING:
in the processing of this application for the permit and/or request, supplemental information in support of the applicat or my corporation, to perform any requirement which may	act on my behalf, or on behalf of my corporation, as the agent proprietary authorization indicated above; and to furnish, on ion. In addition, I authorize the above-listed agent to bind me, be necessary to procure the permit or authorization indicated atement or representation in this application is a violation of
Typed/Printed Name of Applicant	
Signature of Applicant/Agent	Date
(Corporate Title if applicable)	
Please note: The applicant's original signature (not a copy) is	required above.
PERSON AUTHORIZING ACCESS TO THE PROPERTY N	NUST COMPLETE THE FOLLOWING:
consent, after receiving prior notification, to any site visit or Environmental Protection, the Water Management District a and inspection of the proposed project specified in this ap	I have legal authority to allow access to the property, and I in the property by agents or personnel from the Department of and the U.S. Army Corps of Engineers necessary for the review plication. I authorize these agents or personnel to enter the review and inspection. Further, I agree to provide entry to the d work if a permit is granted.
Typed/Printed Name of Applicant	
Signature of Applicant/Agent	Date
(Corporate Title if applicable)	

#### SECTION C

# **Environmental Resource Permit Notice of Receipt of Application**

This information is required in addition to that required in other sections of the application. Please submit five copies of this notice of receipt of application and all attachments with the other required information. **PLEASE SUBMIT ALL INFORMATION ON PAPER NO LARGER THAN 2' x 3'**.

Project Name:

County:

County:

Dee County Board of County Commissioners

Applicant:

Applicant's Address:

Lee County Board of County Commissioners

Lee County Board of County Commissioners

Lee County Board of County Commissioners

1500 Monroe Street, Fort Myers, Florida 33901

1. Indicate the project boundaries on a USGS quadrangle map. Attach a location map showing the boundary of the proposed activity. The map should also contain a north arrow and a graphic scale; show Section(s), Township(s), and Range(s); and must be of sufficient detail to allow a person unfamiliar with the site to find it.

See Exhibit 4.

- 2. Provide the names of all wetlands, or other surface waters that would be dredged, filled, impounded, diverted, drained, or would receive discharge (either directly or indirectly), or would otherwise be impacted by the proposed activity, and specify if they are in an Outstanding Florida Water or Aquatic Preserve:

  This application is for a Conceptual Permit. No construction activities are proposed at this time.
- 3. Attach a depiction (plan and section views), which clearly shows the works or other facilities proposed to be constructed. Use multiple sheets, if necessary. Use a scale sufficient to show the location and type of works.

See Exhibits 5-15.

- 4. Briefly describe the proposed project (such as "construct a deck with boatshelter", "replace two existing culverts", "construct surface water management system to serve 150 acre residential development"):

  The proposed project includes culvert replacements and additions, raising roadway elevations at Creek crossings, conveyance improvements such as re-grading and widening ditches or swales, and creation of storage facilities such as ponds.
- 5. Specify the acreage of wetlands or other surface waters, if any, that are proposed to be disturbed, filled, excavated, or otherwise impacted by the proposed activity: 3.7 acres
- 6. Provide a brief statement describing any proposed mitigation for impacts to wetlands and other surface waters (attach additional sheets if necessary):

Mitigation can be provided, if necessary, in Lee County's Nalle Grade Park in the Bayshore Creek Basin, where a 30 +/- acre wetland is proposed to be re-hydrated and enhanced.

Application Name: Application Number:	FOR AGENCY USE ONLY
Office where the application can be inspected:	

#### SECTION E

# INFORMATION FOR STANDARD GENERAL, INDIVIDUAL AND CONCEPTUAL ENVIRONMENTAL RESOURCE PERMITS FOR PROJECTS NOT RELATED TO A SINGLE FAMILY DWELLING UNIT

Please provide the information requested below if the proposed project requires either a standard general, individual, or conceptual approval environmental resource permit and is not related to an individual, single family dwelling unit, duplex or quadraplex. The information listed below represents the level of information that is usually required to evaluate an application. The level of information required for a specific project will vary depending on the nature and location of the site and the activity proposed. Conceptual approvals generally do not require the same level of detail as a construction permit. However, providing a greater level of detail will reduce the need to submit additional information at a later date. If an item does not apply to your project, proceed to the next item. PLEASE SUBMIT ALL INFORMATION ON PAPER NO LARGER THAN 24" X 36".

#### I. Site Information

- A. Provide a map(s) of the project area and vicinity delineating USDA/SCS soil types. Appendix I of the NFMSWMP Report for the Soils Map.
- B. Provide recent aerials, legible for photointerpretation with a scale of 1" = 400 ft, or more detailed, with project boundaries delineated on the aerial. See Exhibits 5 -15.
- C. Identify the seasonal high water or mean high tide elevation and normal pool or mean low tide elevation for each on site wetland or surface water, including receiving waters into which runoff will be discharged. Include dates, datum, and methods used to determine these elevations. The SHW elevation is estimated from the soil survey to be 1.5 feet below natural ground. Detailed soil information will be collected during the detailed design and preparation of construction plans.
- D. Identify the wet season high water tables at the locations representative of the entire project site. Include dates, datum, and methods used to determine these elevations. <u>Groundwater contour maps are provided by basin in the NFMSWMP Report. Determination of site specific SHW elevations will be determined through borings performed for detailed design purposes.</u>

#### II. Environmental Considerations

- A. Provide results of any wildlife surveys that have been conducted on the site, and provide any comments pertaining to the project from the Florida Game and Fresh Water Fish Commission and the U.S. Fish and Wildlife Service. See Appendix M of NFMSWMP Report.
- B. Provide a description of how water quantity, quality, hydroperiod, and habitat will be maintained in on-site wetlands and other surface waters that will be preserved or will remain undisturbed. N/A
- C. Provide a narrative description of any proposed mitigation plans, including purpose, maintenance, monitoring, and construction sequence and techniques, and estimated costs. <u>A detailed mitigation plan</u> will be developed during the design of the Bayshore Creek basin improvements at Nalle Grade Park
- D. Describe how boundaries of wetlands or other surface waters were determined. If there has ever been a jurisdictional declaratory statement, a formal wetland determination, a formal determination, a validated informal determination, or a revalidated jurisdictional determination, provide the identifying number. Wetland boundary determinations will be made during the design process, prior to the preparation of construction plans for each project.
- E. Impact Summary Tables:



- 1. For all projects, complete Table 1, 2 and 3 as applicable. A general area of impact has been estimated. However, until a formal wetland determination is made, topographic information is collected and the detailed design is completed, the actual impacts cannot be determined.
- 2. For docking facilities or other structures constructed over wetlands or other surface waters, provide the information requested in Table 4. N/A
- 3. For shoreline stabilization projects, provide the information requested in Table 5. \_\_\_\_\_

#### III. Plans

Provide clear, detailed plans for the system including specifications, plan (overhead) views, cross sections (with the locations of the cross sections shown on the corresponding plan view), and profile (longitudinal) views of the proposed project. The plans must be signed and sealed by an appropriate registered professional as required by law. Plans must include a scale and a north arrow. These plans should show the following:

- A. Project area boundary and total land area, including distances and orientation from roads or other land marks; See Exhibit 5-13. Individual subbasin maps are included in each subsection of the NFMSWMP Report.
- B. Existing land use and land cover (acreage and percentages), and on-site natural communities, including wetlands and other surface waters, aquatic communities, and uplands. Use the Florida Land Use Cover & Classification System (FLUCCS) (Level 3) for projects proposed in the South Florida Water Management District, the St. Johns River Water Management District, and the Suwannee River Water Management District and use the National Wetlands Inventory (NWI) for projects proposed in the Southwest Florida Water Management District. Also identify each community with a unique identification number which must be consistent in all exhibits. See Appendix G of NFMSWMP Report for Existing Conditions Land Use Map.
- C. The existing topography extending at least 100 feet off the project area, and including adjacent wetlands and other surface waters. All topography shall include the location and a description of known benchmarks, referenced to NGVD. For systems waterward of the mean high water (MHW) or seasonal high water lines, show water depths, referenced to mean low water (MLW) in tidal areas or seasonal low water in non-tidal areas, and list the range between MHW and MLW. For docking facilities, indicate the distance to, location of, and depths of the nearest navigational channel and access routes to the channel. See Appendix F of NFMSWMP Report for Survey Data and Surveyed Structures Map.
- D. If the project is in the known flood plain of a stream or other water course, identify the flood plain boundary and approximate flooding elevations; Identify the 100-year flood elevation and floodplain boundary of any lake, stream or other watercourse located on or adjacent to the site; Existing and Future Floodplain maps are provided for the 25-yr 3-day and 100-yr and 3-day storms. FIRM maps of the Studay area are provided in Exhibit 18.
- E. The boundaries of wetlands and other surface waters within the project area. Distinguish those wetlands and other surface waters that have been delineated by any binding jurisdictional determination; <a href="NWI Wetland maps are provided by subbasin in each sub-section of the report.">NWI Wetland maps are provided by subbasin in each sub-section of the report.</a>
- F. Proposed land use, land cover and natural communities (acreage and percentages), including wetlands and other surface waters, undisturbed uplands, aquatic communities, impervious surfaces, and water management areas. Use the same classification system and community identification number used in III (B) above. A Future Conditions Land Use map is provided in Appendix H of the NFMSWMP Report.
- G. Proposed impacts to wetlands and other surface waters, and any proposed connections/outfalls to other surface waters or wetlands; <u>Approximately 3.7 acres.</u>



- H. Proposed buffer zones; N/A
- I. Pre and post-development drainage patterns and basin boundaries showing the direction of flows, including any off-site runoff being routed through or around the system; and connections between wetlands and other surface waters; <u>In general, in each Creek subasin flow is to the Creek and then southerly to the Caloosahatchee River.</u>
- J. Location of all water management areas with details of size, side slopes, and designed water depths; Due to the conceptual nature of this Plan, water management areas have been sized, however not specifically located, with the exception of the proposed "pond" in Nalle Grade Park.
- K. Location and details of all water control structures, control elevations, any seasonal water level regulation schedules; and the location and description of benchmarks (minimum of one benchmark per structure); See typical Detail plan.
- L. Location, dimensions and elevations of all proposed structures, including docks, seawalls, utility lines, roads, and buildings; N/A
- M. Location, size, and design capacity of the internal water management facilities; N/A
- N. Rights-of-way and easements for the system, including all on-site and off-site areas to be reserved for water management purposes, and rights-of-way and easements for the existing drainage system, if any; A section on R/W is included in each subbasin section of the report. In most areas the culvert crossings are located within public road R/W. In some cases easements will be required.
- O. Receiving waters or surface water management systems into which runoff from the developed site will be discharged; All of the Creeks within the NFMSWMP Project area discharge into the Caloosahatchee River.
- P. Location and details of the erosion, sediment and turbidity control measures to be implemented during each phase of construction and all permanent control measures to be implemented in post-development conditions; N/A Conceptual Plan only.
- Q. Location, grading, design water levels, and planting details of all mitigation areas; NA
- R. Site grading details, including perimeter site grading; N/A
- S. Disposal site for any excavated material, including temporary and permanent disposal sites; N/A
- T. Dewatering plan details; N/A
- U. For marina facilities, locations of any sewage pumpout facilities, fueling facilities, boat repair and maintenance facilities, and fish cleaning stations; N/A
- V. Location and description of any nearby existing offsite features which might be affected by the proposed construction or development such as stormwater management ponds, buildings or other structures, wetlands or other surface waters. See Ecological Assessment Memorandum included as Exhibit 17.
- W. For phased projects, provide a master development plan. N/A

#### IV. Construction Schedule and Techniques

Provide a construction schedule, and a description of construction techniques, sequencing and equipment. This information should specifically include the following:

A. Method for installing any pilings or seawall slabs; N/A

sfwmd.gov

- B. Schedule of implementation of a temporary or permanent erosion and turbidity control measures; N/A
- C. For projects that involve dredging or excavation in wetlands or other surface waters, describe the method of excavation, and the type of material to be excavated; N/A
- D. For projects that involve fill in wetlands or other surface waters, describe the source and type of fill material to be used. For shoreline stabilization projects that involve the installation of riprap, state how these materials are to be placed, (i.e., individually or with heavy equipment) and whether the rocks will be underlain with filter cloth; N/A
- E. If dewatering is required, detail the dewatering proposal including the methods that are proposed to contain the discharge, methods of isolating dewatering areas, and indicate the period dewatering structures will be in place (Note: a consumptive use or water use permit may by required); N/A
- F. Methods for transporting equipment and materials to and from the work site. If barges are required for access, provide the low water depths and draft of the fully loaded barge; and N/A
- G. Demolition plan for any existing structures to be removed; N/A
- H. Identify the schedule and party responsible for completing monitoring, record drawings, and as-built certifications for the project when completed. N/A

#### V. Drainage Information

- A. Provide pre-development and post-development drainage calculations, signed and sealed by an appropriate registered professional, as follows:
  - 1. Runoff characteristics, including area, runoff curve number or runoff coefficient, and time of concentration for each drainage basin; See tables in each subbasin section on Curve Numbers and Tc. See Appendix D for travel times.
  - 2. Water table elevations (normal and seasonal high) including aerial extent and magnitude of any proposed water table drawdown; See Groundwater Contour maps included in each basin section of the Report.
  - 3. Receiving water elevations (normal, wet season, design storm); See NFMSWMP report.
  - 4. Design storms used including rainfall depth, duration, frequency, and distribution; See Calculations.
  - 5. Runoff hydrograph(s) for each drainage basin, for all required design storm event(s); See Appendix Q and R for AdICPR files.
  - 6. Stage-storage computations for any area such as a reservoir, close basin, detention area, or channel, used in storage routing; See Appendix P of NFMSWMP report.
  - 7. Stage-discharge computations for any storage areas at a selected control point, such as control structure or natural restriction; See Appendix Q and R for model input.
  - 8. Flood routings through on-site conveyance and storage areas; <u>See NFMSWMP report. Appendix Q Existing Conditions</u>, <u>Appendix R Proposed Conditions</u>.
  - 9. Water surface profiles in the primary drainage system for each required design storm event(s); <u>See</u> Appendix S of NFMSWMP report for stages by subbasin.

- 10. Runoff peak rates and volumes discharged from the system for each required design storm event(s); and Summary Tables are provided in Report by basin.
- 11. Tail water history and justification (time and elevation); <u>See Appendix Q and R of NFMSWMP report for AdICPR model input.</u>
- 12. Pump specifications and operating curves for range of possible operating conditions (if used in system). N/A
- B. Provide the results of any percolation tests, where appropriate, and soil borings that are representative of the actual site conditions; N/A
- C. Provide the acreage, and percentages of the total project, of the following:
  - 1. impervious surfaces, excluding wetlands, N/A
  - 2. pervious surfaces (green areas, not including wetlands), 30 ac
  - 3. lakes, canals, retention areas, other open water areas, 30 ac
  - 4. wetlands; 3.7
- D. Provide an engineering analysis of floodplain storage and conveyance (if applicable), including:
  - 1. Hydraulic calculations for all proposed traversing works; See Appendix Q and R of NFMSWMP report for AdlCPR model input.
  - 2. Backwater water surface profiles showing upstream impact of traversing works; <u>See Appendix Q</u> and R of NFMSWMP report for AdICPR model input.
  - 3. Location and volume of encroachment within regulated floodplain(s); and N/A
  - 4. Plan for compensating floodplain storage, if necessary, and calculations required for determining minimum building and road flood elevations. N/A
- E. Provide an analysis of the water quality treatment system including:
  - 1. A description of the proposed stormwater treatment methodology that addresses the type of treatment, pollution abatement volumes, and recovery analysis; and <u>A section on Water Quality projects are included in each subbasin section.</u>
  - 2. Construction plans and calculations that address stage-storage and design elevations, which demonstrate compliance with the appropriate water quality treatment criteria. N/A
- F. Provide a description of the engineering methodology, assumptions and references for the parameters listed above, and a copy of all such computations, engineering plans, and specifications used to analyze the system. If a computer program is used for the analysis, provide the name of the program, a description of the program, input and output data, two diskette copies, if available, and justification for model selection. A water quality model for each subbasin is included in each subbasin section.

#### VI. Operation and Maintenance and Legal Documentation

A. Describe the overall maintenance and operation schedule for the proposed system. <u>The system will be Operated and Maintained by Lee County.</u>



- B. Identify the entity that will be responsible for operating and maintaining the system in perpetuity if different than the permittee, a draft document enumerating the enforceable affirmative obligations on the entity to properly operate and maintain the system for its expected life, and documentation of the entity's financial responsibility for long term maintenance. If the proposed operation and maintenance entity is not a property owner's association, provide proof of the existence of an entity, or the future acceptance of the system by an entity which will operate and maintain the system. If a property owner's association is the proposed operation and maintenance entity, provide copies of the articles of incorporation for the association and copies of the declaration, restrictive covenants, deed restrictions, or other operational documents that assign responsibility for the operation and maintenance of the system. Provide information ensuring the continued adequate access to the system for maintenance purposes. Before transfer of the system to the operating entity will be approved, the permittee must document that the transferee will be bound by all terms and conditions of the permit. N/A
- C. Provide copies of all proposed conservation easements, storm water management system easements, property owner's association documents, and plats for the property containing the proposed system. N/A
- D. Provide indication of how water and waste water service will be supplied. Letters of commitment from off-site suppliers must be included. N/A
- E. Provide a copy of the boundary survey and/or legal description and acreage of the total land area of contiguous property owned/controlled the applicant. N/A

#### VII. Water Use

- A. Will the surface water system be used for water supply, including landscape irrigation, or recreation. N/A
- B. If a Consumptive Use or Water Use permit has been issued for the project, state the permit number. N/A
- C. If no Consumptive Use or Water Use permit has been issued for the project, indicate if such a permit will be required and when the application for a permit will be submitted. N/A
- D. Indicate how any existing wells located within the project site will be utilized or abandoned. N/A

# List of Section/Township/Range for NFMSWMP in Lee County

Refer to Exhibit 3 - Project Location Map

S14-36/T41S/R25E

S23-38, 33-36/T41S/R24E

\$1-4, 9-12, 13-17, 20-24, 25-28, 33-36/T42\$/R24E

S1-36/T42S/R25E

\$1-2, 9-12, 13-16, 22-24, 25-27, 34-36/T43\$/R24E

S1-29/T43S/R25E

S6-7, 18-19,30/T43S/R26E

S1-3, 10-11/T44S/R24E

**Pre-application Meeting Summary** 



AECOM 561 684 3375 tel
2090 Palm Beach Lakes Blvd. 561 689 8531 fax
Suite 600
West Palm Beach, FL 33409
www.aecom.com

# **Meeting Summary**

To:

**Meeting Attendees** 

From:

Karen D. Brandon, P. E.

Subject:

NFMSWMP Pre-application Meeting

Date:

April 26, 2010

A meeting was held on April 26, 2010 at South Florida Water Management District's Ft. Myers office. The following were in attendance:

Clyde Dabbs	SFWMD	cdabbsjr@sfwmd.gov	239-338-2929
Steve Sentes	SFWMD	ssentes@sfwmd.gov	239-338-2929 x7754
Laura Layman	SFWMD	llayman@sfwmd.gov	239-338-2929 x7725
Robert Garland	AECOM	Robert.garland@aecom.com	239-278-7996
Anura Karuna-	Lee	Akaruna-muni@leegov.com	239-533-8131
Muni	County		
Roland Ottolini	Lee	ottolini@leegov.com	239-533-8127
	County		
Karen Brandon	AECOM	Karen.brandon@aecom.com	561-684-3375

After a brief introduction by Anura and an overview by Karen Brandon, the following items were discussed:

- Anura stated that the County's goal is to obtain a conceptual permit for all recommended projects and to eventually obtain construction permits for each individual project.
- SFWMD staff asked whether Lee County would be taking the NFMSWMP Study to the BOCC for approval/adoption. SFWMD strongly recommends that the BOCC adopt the plan. Roland will look into what type of action the BOCC has taken in the past for master plans such as this.
- Field work will be required if there are wetlands in the area of the proposed projects. Direct and secondary wetland impacts will have to be addressed.

- Aerials
  - o Can provide an overall aerial of the off-site basin area in Charlotte Co.
  - Aerials of the specific project areas should be provided at a larger scale.
- 100 year flood FEMA maps Anura has the latest FEMA maps for Lee County and he can provide them to AECOM. Laura thinks SFWMD will want to see the FEMA maps for the entire NFMSWMP basin area. Laura will confirm with Bill Foley.
- Topography The Study used 1 ft. contours along with surveyed cross sections at 1,000 ft intervals in the creeks as well as at structures, and construction plans of roadways. The latest Lee County LIDAR data was not available until late in the study.
- With the exception of the pond sited at the Park at Nalle Grade, the ponds have not been sited per Lee County's request. Therefore, the other ponds will not be included in the conceptual ERP application at this time.
- Laura requested that a prioritization or phasing of projects be provided.
- A description of how the projects are prioritized should be provided, such as from downstream to upstream. If projects are phased, we may need to demonstrate that there will be no interim adverse downstream impacts.
- WSWT information will be required.
- Per SFWMD, enough field information to determine the potential for direct and secondary impacts to wetlands from an environmental staff person will be required for the proposed project sites.
- May need a listed species survey, more so at the time of application for a construction permit.
- Existing Lee County projects that have already been permitted can be used\_as mitigation. Or, if we can show a proposed project will improve wetland hydroperiod, this can be credited toward mitigation.
- Ownership Information will have to be included in the application, as well as whether additional right-of-way or easements will be required.
- SFWMD will most likely request a title determination from the State for Sovereign Submerged Lands in the creeks.

Meeting Summary April 26, 2010 Page 3

• May need to update the AdICPR model for new Lee Co. projects that have been issued SFWMD permits and been constructed.

- Photographs at the specific project locations would be helpful for the SFWMD reviewers also.
- It will be important to show that there are no upstream or downstream impacts in locations where we are proposing to add or upsize culverts.
- Any further questions can be brought up at the next Lee Co./SFWMD monthly meeting held on the 2<sup>nd</sup> Wednesday of the month. The next meeting is scheduled for May 12<sup>th</sup>.

cc: Mark Abbott Amy Eason Pradeep Nagarajan

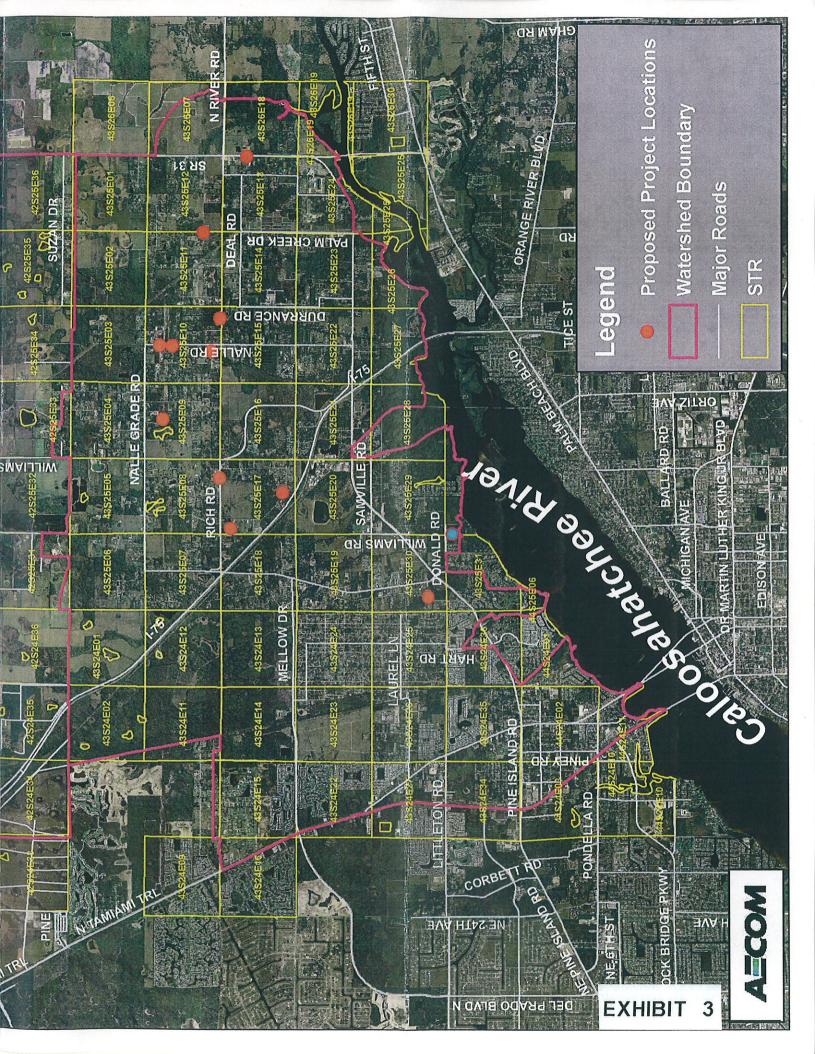
AECOM Project No.: 60061637

# SIGN-IN SHEET

NFMSWMP Pre-Application Meeting			
April 26, 2010			
at SFWMD - Ft. Myers			

	Name:	Phone	No.:		
1	Clyde Jobbs SFWM SFWM STWM SOU	(238	) 338	r 2979	
2	Steve Sedes SFWMO Email Address: SSENTES @ SFWMO GOV	(23	1) 33%	-2929 x 77	754
3	Laura Layman, STWMD	( 239		3-2929 *	-772
4	Email Address: Nayman @ Sfuma Robert Harland AFROM	<u>( 259</u>	) 478	- 4996	
<del></del>	Email Address: 106,07. yarland @ accom	<u>. co ~</u>	1	_	,
5	Email Address: alcavana-muni Cleegov. Com			012	
6	Homa Karuna-Muni Email Address: otto live@leggov.c=		<u>) 533</u>	3.8131	
7	ROLAND OTTOLINI		) 533	- 5127	
8.	Email Address:  Yaren Brandon	(561	- ) 684	· -3375	
-	Email Address: Karen, brandon e accom. e	com			
9	Emall Address:		) 		
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11.	Email Address:		<u> </u>		
11	Email Address:				
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Project Location Map Including S/T/R



# USGS Quadrangle Map of NFMSWMP Area

Due to the size of this document, it has not be included in this PDF.

The hard copy can be obtained by contacting the Surface Water Unit with the Lee County Division of Natural Resources.

Phone: 239-533-8109.

# Exhibits 5 through 11

**Proposed Project Maps** 







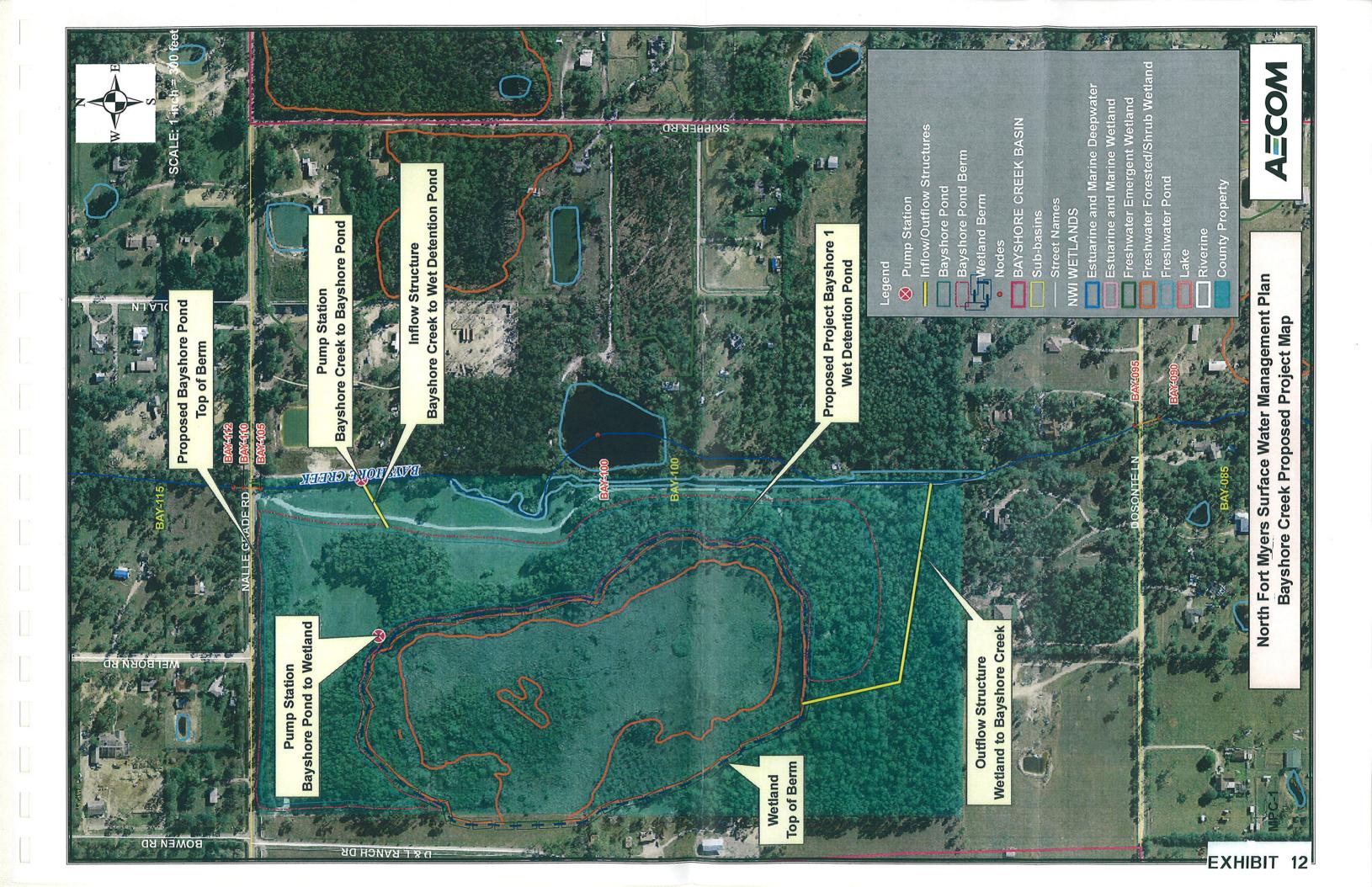








Bayshore Creek
Proposed Project Map



# Exhibit 13A

# Charlotte Co. Subbasin Map

Due to the size of this document, it has not be included in this PDF.

The hard copy can be obtained by contacting the Surface Water Unit with the Lee County Division of Natural Resources.

Phone: 239-533-8109.

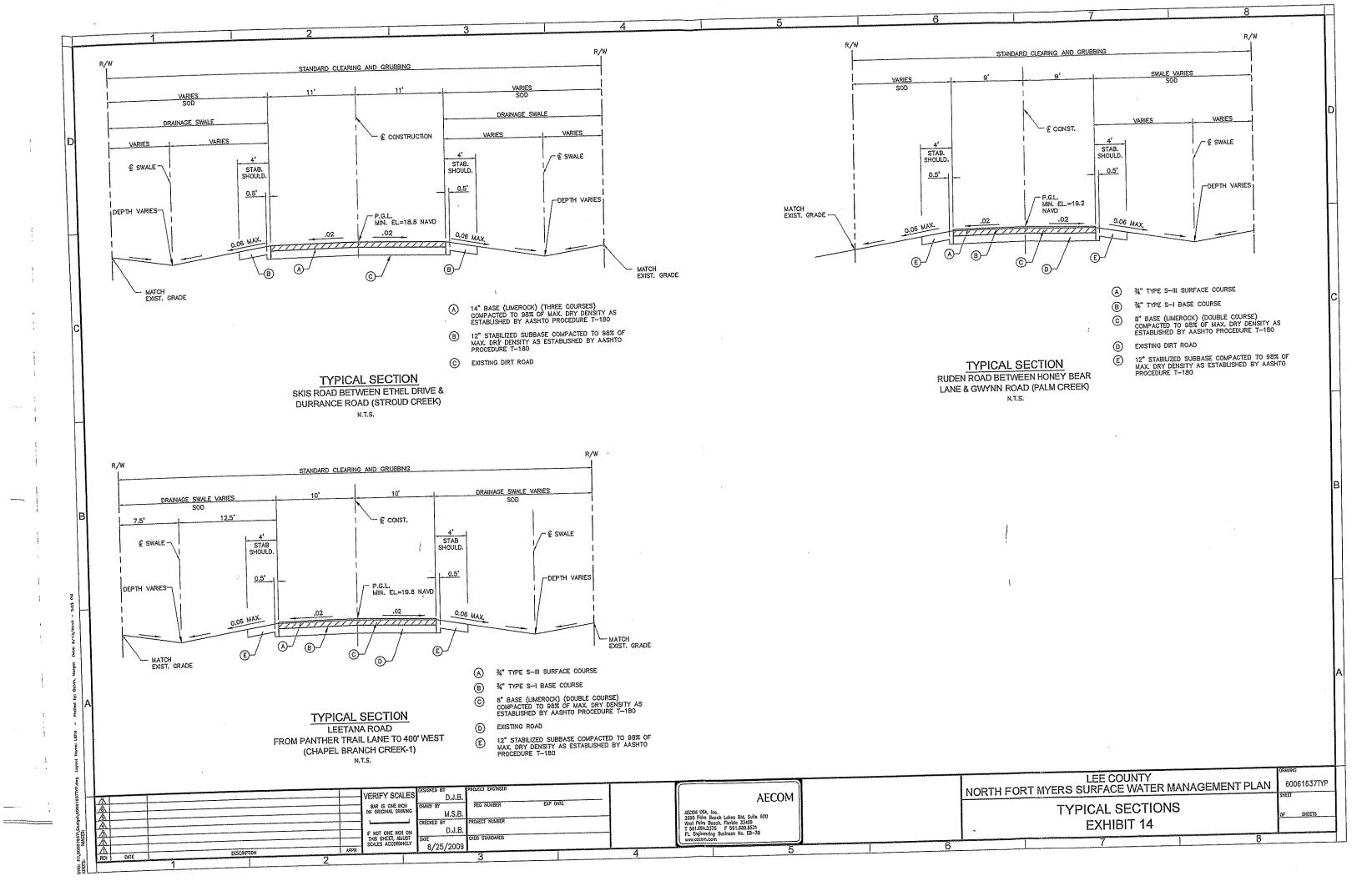
# Exhibit 13B

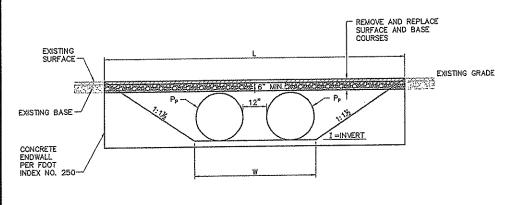
# Lee Co. Subbasin Map

Due to the size of this document, it has not be included in this PDF.

The hard copy can be obtained by contacting the Surface Water Unit with the Lee County Division of Natural Resources.

Phone: 239-533-8109.





#### **NEW CULVERT DETAIL**

INDEX NO. 250-

- SEE TABLE FOR SPECIFIC DIMENSIONAL INFORMATION FOR EACH PROJECT.
- 2. IF MULTIPLE PIPES ARE PROPOSED, THERE SHALL BE 12 INCHES BETWEEN EACH PIPE
- 3. IF EXISTING DIRT SURFACE, REPLACE W/COMPACTED LIMEROCK.

	Př	PROJECT			
	MARSH POINT	STROUD			
Pp	24°ø	30"ø			
Qp	2	2			
Ме	RCP	RCP			
L,	50'	50'			
1	7.0/6.9	15.98/15.95			
Ľ	15'	15'			
W	5' .	6'			

#### REMOVE AND REPLACE SURFACE AND BASE COURSES EXISTING SURFACE -EXISTING GRADE ALC: \*REMOVE EXISTING PIPE ,~ E,\* EXISTING BASE --CULVERT (Ep) I =INVERT CONCRETE

#### REMOVE & REPLACE CULVERT DETAIL N.T.S.

	PROJECT						
	DAUGHTREY	PALM	UNNAMED CREEK #2	UNNAMED CREEK #2	UNNAMED CREEK #2	CHAPEL	
P <sub>o</sub>	36°ø	30°¢	42"¢	42"ø	42°ø	42 <b>"</b> ø	
Q <sub>P</sub>	1	1	2	2	2	2	
Мь	RCP	RCP	RCP	RCP	RCP	RCP	
L <sub>p</sub>	30'	40"	64"	62'	62'	72'	
E <sub>p</sub>	30"	.30"	34"x 48"	34"x 48"	32°x 50°	(2)30"	
T T		15.30/15.25	6.0/5.2	4.7/4.3	3.51/3.2	13.85/13.80	
	20'	15'	25*	25'	25'	25'	
<del>v</del>	3'	2.5'	3.5'	3.5	3.5'	3.5'	

			PROJECT						
		POPASH #1	POPASH #2A	POPASH #28	POPASH #20	POPASH #2D	POPASH #2E		
٣	P <sub>6</sub>	29"x 45"	29"x 45"	29"x 45"	29"x 45"	29"x 45"	29"x 45"		
۳	Q <sub>o</sub>	1	1	1	1	11	1		
r	M <sub>a</sub>	ERCP	ERCP	ERCP	ERCP	ERCP	ERCP		
۲	Lp	40'	40'	40*	40'	42'	48'		
r	E,	24"x 38"	24"x 38"	24"x 38"	24"x 38"	24 x 38"	24"x 38"		
-	¥	19,3/19.24	19.58/19.57	19.59/19.58	19.61/19.60	19.63/19.62	19.73/19.69		
H	<del></del>	15'	15'	15'	15'	15'	15'		
-	<del>v</del>	3,75	3.75	3,75	3.75	3.75'	3.75'		

### NOTES:

- SEE TABLE FOR SPECIFIC DIMENSIONAL INFORMATION FOR EACH PROJECT.
- 2. IF MULTIPLE PIPES ARE PROPOSED, THERE SHALL BE 12 INCHES BETWEEN EACH PIPE.
- 3. IF EXISTING DIRT SURFACE, REPLACE W/COMPACTED LIMEROCK.

# REMOVE AND REPLACE SURFACE AND BASE COURSES EXISTING SURFACE -\ EXISTING GRADE 重装度 EXISTING BASE -I =INVERT CONCRETE ENDWALL PER FDOT INDEX NO, 250 -

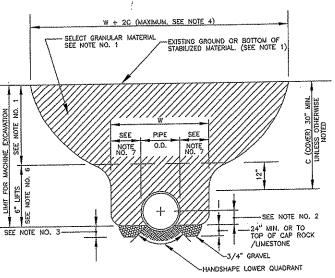
# ADDITIONAL CULVERT DETAIL

#### NOTES:

- SEE TABLE FOR SPECIFIC DIMENSIONAL INFORMATION FOR EACH PROJECT.
- 2. IF MULTIPLE PIPES ARE PROPOSED, THERE SHALL BE 12 INCHES BETWEEN EACH PIPE
- 3. IF EXISTING DIRT SURFACE, REPLACE W/COMPACTED LIMEROCK.

#### **LEGEND**

- PROPOSED PIPE
- PROPOSED PIPE QUANTITY
- PROPOSED PIPE MATERIAL
- PROPOSED PIPE LENGTH PROPOSED
- EXISTING PIPE DIMENSIONS
- INVERT (UP/DOWN STREAM)
- LIMITS OF RECONSTRUCTION
- WIDTH OF SWALE BOTTOM
- RISE
- PROPOSED CULVERT LENGTH



#### NOTES:

- 1. IF THE TRENCH IS LOCATED UNDER ASPHALT PAVEMENT, THE TRENCH IS TO BE BACKFILLED WITH CLEAN GRANULAR MATERIAL, IN 8" LAYERS (MAXIMUM), COMPACTED TO 100% MAXIMUM DENSITY PER A.S.H.T.O. T-99 SPECIFICATIONS. IF THE TRENCH IS LOCATED OUTSIDE OF PAVEMENT AREAS, THE TRENCH IS TO BE BACKFILLED WITH CLEAN GRANULAR MATERIAL, IN 12" LAYERS (MAXIMUM), AND COMPACTED TO 98% MAXIMUM DENSITY PER A.S.H.T.O. T-99 SPECIFICATION.
- FILL MATERIAL TO BE PLACED MANUALLY UP TO THE SPRING LINE OF THE PIPE AND COMPACTED BY HAND PRIOR TO ADDING ADDITIONAL MATERIAL.
- AS AN ALTERNATE TO HANDSHAPING LOWER QUANDRANT, CONTRACTOR MAY OVER EXCAVATE THE TRENCH AND BACKFILL WITH 3/4" GRAVEL AS SHOWN.
- IF "W+2C" EXCEEDS 12 FEET, THE TRENCH SHALL BE SHEETED AND BRACED OR OTHERWISE LIMITED TO NOT GREATER THAN 12 FEET.
- CONTRACTOR IS RESPONSIBLE FOR MEETING ALL SAFETY STANDARDS FOR TRENCHING WIDTHS CONSIDERING O.S.H.A. STANDARDS FOR SOIL TYPES, TRENCH WIDTHS. ANGLE OF REPOSE, ETC. IN ORDER TO PROPERLY PROTECT HIS EMPLOYEES.
- 6. IF USING H.D.P.E. PIPE, COMPACT MATERIAL UP TO 12" ABOVE PIPE BY HAND. IF USING D.I. PIPE, COMPACT MATERIAL BY HAND UP TO TOP OF PIPE AND COMPACT REMAINING 12" TO 95% MAXIMUM DENSITY PER A.A.S.H.T.O. T-99 SPECIFICATIONS.
- 7. 12" MAX, OR OUTSIDE PIPE DIAMETER DIMIDED BY 2 WHICHEVER IS GREATER.

#### TYPICAL PIPELINE TRENCH AND BACKFILL

		LEE COUNTY	DRAWING	$\sqcap$
$\vdash$		NORTH FORT MYERS SURFACE WATER MANAGEMENT PLAN	60061637DETS	
	BAR IS ONE INCH.  ON ORIGINAL GRAWING W.S.B.  CHERKED BY PROJECT NUMBER  AECON USA, Inc. 2009 Palm Beach, Lokes Bid, Suite 600	DETAILS	Shed)	ı
MAGES	⚠         West Poin Beech, Florido 33409           ↑         TSISSET, ADJUST         D.J.B.           THIS SHEET, ADJUST         DATE         CADO STANDARDS	EXHIBIT 15	OF SHEETS	ĺ
	SCHES ACCORDINGLY 8/25/2009 WWW.decons.com	8		

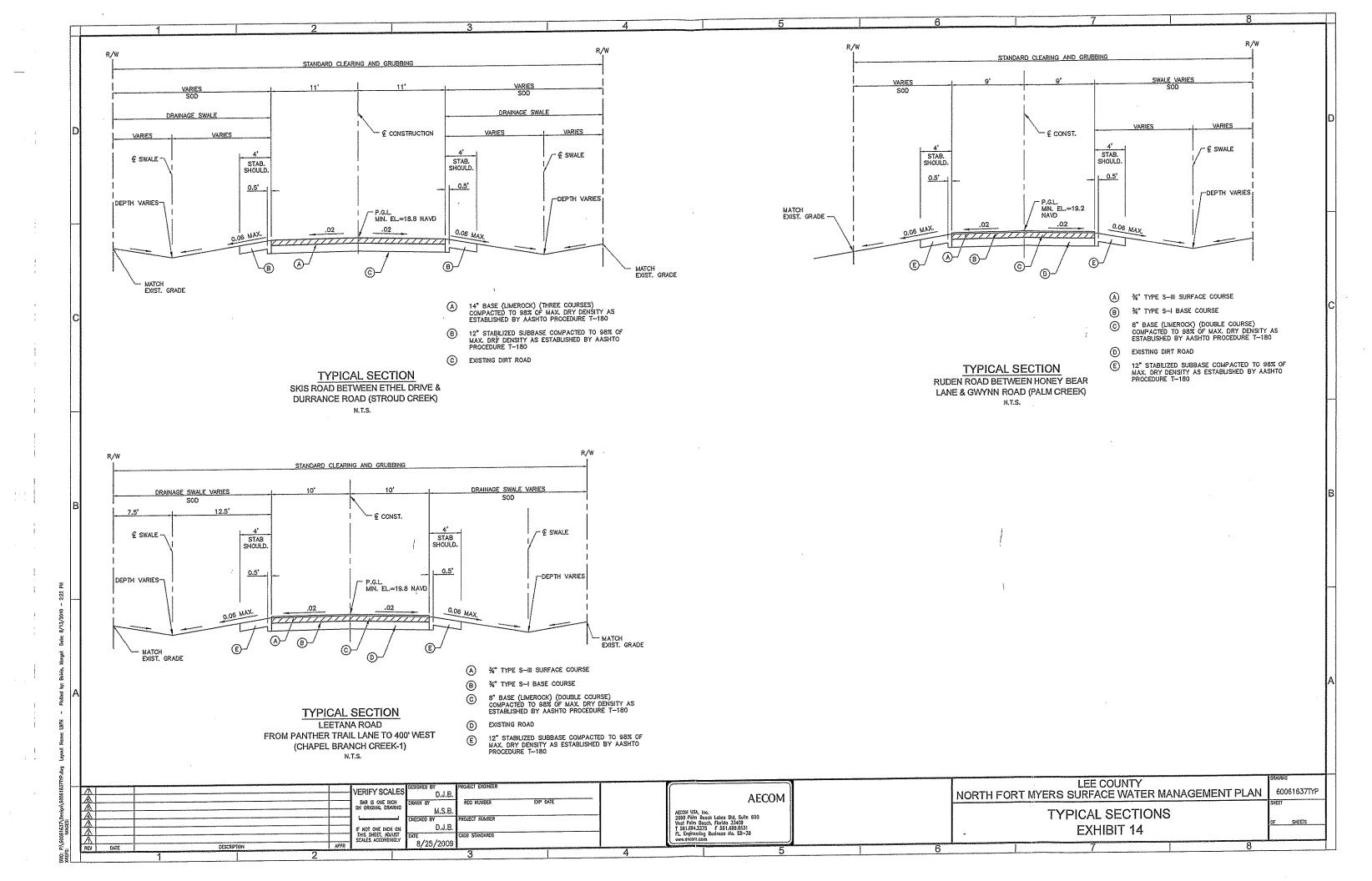
PROJECT

COHN 24"ø 1

RCP 40'

18"x24" 0.13/-0.27

15'



# Exhibit 16

# Topographic Map – 2-Foot Contours of Study Area in Lee County

Due to the size of this document, it has not be included in this PDF.

The hard copy can be obtained by contacting the Surface Water Unit with the Lee County Division of Natural Resources.

Phone: 239-533-8109.

# Exhibit 17

**Ecological Assessment Technical Memorandum** 

407.425.1100 tel 407.246.7002 fax

То	Anura Karuna-Muni	Page	1
CC	Karen Brandon, P.E.		
Subject	North Fort Myers Surface Water Management Plan		
***************************************	Ecological Assessment Technical Memorandum		
From	Michael Howe		
Date	July 2010		

AECOM conducted an Ecological Assessment of the eight drainage improvements projects proposed by Lee County and described in the *North Fort Myers Surface Water Management Plan* (AECOM 2010). The eight proposed drainage projects included in this assessment include five culvert replacement projects, two new culvert installations and one proposed pond (Table 1). All of the projects are located in North Fort Myers, Lee County, Florida.

The scope of this assessment was to evaluate the potential impact of each of the proposed projects to federal or state listed plants and animals and potentially jurisdictional wetlands or surface waters. Subsurface soil, water quality, archaeological, or hazardous materials investigations were not conducted by AECOM as part of this Ecological Assessment. These findings reflect conditions on-site at the time of the investigation and do not preclude the possibility that on-site conditions may change in the future.

# Methods

A field review of the each of the proposed project sites was conducted on July 6<sup>th</sup>, 2010. Vegetative community types and general observations were recorded via field data sheets and photographs taken of the site. A list of plant species encountered was recorded for the project site. This list reflects representative species observed within the site and is not necessarily a complete floristic inventory.

Potentially jurisdictional wetlands and surface waters were evaluated based on the Interim Regional Supplemental to the Corps of Engineers Wetlands Delineation Manual: Atlantic and Gulf Coastal Plain (October 2008) and the Unified Wetland Delineation Methodology for the State of Florida dated 1 July 1994 (62-340, Florida Administrative Code (F.A.C.)) in 2004. The limits of wetland and surface waters were not staked or flagged in the field during this assessment.

The project areas were reviewed for the presence of any protected species through actual observation, signs of scat, prints, or other indications of their presence or utilization of the study area. A review of Florida Fish and Wildlife Conservation Commission (FFWCC) database (<a href="http://research.myfwc.com/">http://research.myfwc.com/</a>) records for known bald eagle (<a href="http://research.myfwc.com/">Haliaeetus leucocephalus</a>) occurrences in the vicinity of the study area was also conducted. Statements regarding protected species are based on limited field observations and existing data records, and do not exclude the possibility that listed species may occasionally forage on-site or may move onto the site at a later date.

# Chapel Branch Creek

Two 30-inch reinforced concrete pipes (RCPs) convey Chapel Branch Creek flow under Leetana Road (Exhibit A). The County proposes to raise the grade of the road approximately 0.4 feet and replace the existing 30-inch RCPs (CHA-046 and CHA 050) with 42-inch RCPs. Raising the road grade may result in permanent impacts to potential jurisdictional wetlands and require authorization from the ACOE and SFWMD. The upstream invert elevation of the proposed RCPs will be lowered by 0.1 ft. It is not anticipated that this small change in invert elevation will have any hydrologic impact on creek base flows or the seasonal high water elevation in wetlands upstream or downstream of Leetana Road.

The vegetation in the right of way north and south of the road pavement includes Brazilian pepper (Schinus terebinthifolius), cabbage palm (Sabal palmetto), and Carolina willow (Salix sp.) (Figure 1). The wetland habitats adjacent to the road are not likely to support protected species. A review of database records indicates that the site is not located in the protection zone of a known bald eagle nest.

Figure 1. Leetana Road crossing Chapel Branch Creek



# **Daughtrey Creek East Branch**

Daughtrey Creek flows through several conveyance structures located on private property south of Rich Road and west of Leetana Rd (Exhibit B). The County proposed to replace one 30-inch RCP (DAU-EB-077) with a larger 36-inch RCP. At the time of this assessment the existing 30-inch pipe was under water (Figure 2).

The ACOE and SFWMD will likely exert jurisdiction over the Daughtrey Creek channel and adjacent wetland areas. The wetland in and surrounding the creek is vegetated with Carolina willow, water oak (Quercus nigra), and a few slash pine (Pinus elliottii). Alligator weed (Alternanthera philoxeroides) grows in the creek at the pipe location. The invert of the proposed new pipe is not expected to change and therefore there are no anticipated hydrologic impacts to the creek or associated wetlands. The larger pipe size is likewise not anticipated to have adverse hydrologic impacts on existing habitats as it appears the creek currently breaches the current crossing. However, there may be permanent impacts to the wetland from the construction of the crossing (given the current one does not appear to extend above the high water elevation of the creek) and it may require authorization from the ACOE and SFWMD. No listed species were observed in the vicinity of the site. Database records indicate that the site is not located in the protection zone of a known bald eagle nest.

Figure 2. Pipe under water in Daughtrey Creek



# Popash Creek

A branch of Popash Creek flows through a series of 24-inch x 38-inch ERCPs and roadside ditches in the Nalle Road right of way (Exhibit C). The County proposes to replace these ERCPs with 29-inch x 45-inch ERCP. The inverts of the ERCPs in the middle will vary slightly from the existing inverts. However the invert of the upstream- most ERCP (POP-142H) and the downstream- most ERCP (POP-141) will not be changed.

The ACOE and SFWMD will likely exert jurisdiction over the ditch in the Nalle Road right of way. The project is not anticipated to have any permanent adverse impact to wetlands. The right of way is well maintained and the roadside ditches are not vegetated (**Figure 3**). The ditches do not provide habitat for protected species nor is it anticipated that the proposed project will result in any adverse impact to wildlife or wetland resources.

Figure 3. Branch of Popash Creek in Nalle Road Right of Way



# Stroud Creek

Skis Road crosses Stroud Creek without the benefit of a culvert (Exhibit D). The County proposes to raise the grade of Skis Road by one foot and install two 30-inch RCPs to convey flow. At the time of this assessment the creek was flowing over the road (Figure 4). Stroud Creek flows from left to right across the flooded road right of way pictured in Figure 4. The project will likely result in impacts to potentially jurisdictional wetlands within the Skis Road right of way and require authorization from ACOE and SFWMD.

The wetlands north and south of Skis Road support forested canopy of cabbage palm, slash pine, laurel oak (*Quercus laurifolia*), melaleuca (*Melaleuca quinquenervia*), and Brazilian pepper. The stream channel supports maidencane (*Panicum hemitomon*) and Carolina willow. There were no listed species observed utilizing the right of way and it is unlikely that the proposed project would impact these species.

Figure 4. Skis Road flooded at Stroud Creek crossing



# Palm Creek

A 30-inch corrugated metal pipe (CMP) conveys flows from Palm Creek under Ruden Road (Exhibit E). The County proposes to raise the grade of Ruden Road and replace the existing CMP with an RCP of the same size with a lower invert. Potentially jurisdictional wetlands north of Ruden Road include a small pond and shrubby Carolina willow wetland. A narrow berm vegetated with Australian pine and Brazilian pepper separated the pond from the road side ditch where the existing CMP collects flow from the willow wetland (Figure 5). Riparian wetlands adjacent to Palm Creek appear absent south of Ruden Rd and the creek appears channelized and is vegetated mostly with cattail. Raising the road grade may result in impacts to wetlands in the right of away and require authorization from the SFWMD and ACOE. In addition, the proposed new invert elevation of the 30-inch RCP is 0.5 ft lower than the existing elevation. This could result in less ponding of the willow wetland and pond north of Ruden Road.

No listed species were observed in the right of way. A review of database records indicates that the site is not located in the protection zone of a known bald eagle nest.





# Unnamed 2 Creek

The County proposes to replace three 34-inch x 48-inch ECMPs with dual 42-inch RCPs in State Road 31 (SR 31) right of way (**Exhibit F**). The ECMPs are driveway culverts that convey stormwater runoff. It is not clear that the ditches on the west side of SR 31 right of way are part of a natural unnamed creek. No flow was observed in the ditch at the time of this assessment (**Figure 6**). The SFWMD will likely exert jurisdiction over the ditches as they are part of the stormwater management system for SR 31. The ACOE will not likely exert jurisdiction over the ditches unless it is demonstrated that they are part of a natural creek.

No listed species were observed utilizing the project area, and a review of database records indicate that the project area is not in the protection zone of a known bald eagle nest. The right of way is well maintained and the ditches are not expected to support habitat sufficient for listed species.

Figure 6. Driveway culverts on SR 31 looking north



# Marsh Point Creek

Twin Brooks Road crosses forested wetlands that are the headwaters of Marsh Point Creek (**Exhibit G**). There is no conveyance of surface water from the forested wetland north of Twin Brooks Road to the wetland south of the road. The County proposes to add two 24-inch RCPs.

The wetlands are forested with slash pine, water oak, cabbage palm, and a few bald cypress (Taxodium distichum) (Figure 7). Immediately next to the road, the vegetation includes Carolina willow and primrose willow (Ludwidgia peruviana). The willow habitat will likely be impacted during the installation of the RCPS and construction of end treatments. Additionally, the new RCPs may reduce the stage of the wetlands north of Twin Brooks Road. The project may in fact restore the historic connection between the two portions of wetlands that have been fragmented by Twin Brooks Road. These impacts will require authorization from the SFWMD and ACOE.

No listed species were observed in the right of way. It is unlikely that the project will have any impact on listed species.





# **Bayshore Creek Pond at Nalle Grade Park**

The proposed Bayshore Creek project is located on the Nalle Grade Park site (Exhibit H). The site was reviewed from Nalle Grade Road south to the archery club facilities. Bayshore Creek is located along the east property boundary, flows north to south, and appears to have been channelized (Figure 8). The creek supports patches of alligator weed and torpedo grass. The west portion of the Nalle Grade Park site supports a freshwater wetland. The wetland supports a marsh community of soft rush (Juncus effusus), cordgrass (Spartina bakerii), and shrubs such as wax myrtle (Myrica cerifera) surrounded a transitional, mixed forested wetland of slash pine, water oak, laurel oak, and dahoon holly (Figure 9). Melalueca is found around the edges of the marsh and Brazilian pepper can be found throughout the forested habitat. Surface water from the marsh outfalls through a ditch to the southeast to Bayshore Creek. Any proposed impacts to the on-site wetland habitats would require authorization from the SFWMD and ACOE. The wetland limits shown on Exhibit H are from the National Wetland Inventory (NWI) and would need to be delineated in the field to provide a more accurate estimated of the onsite wetland area and potential impacts.

No listed species were observed utilizing the project area, and a review of database records indicate that the project area is not in the protection zone of a known bald eagle nest.

Figure 8. Bayshore Creek viewed north towards Nalle Grade Road



Figure 9. Marsh at Nalle Grade Park



AECOM 320 East South Street Orlando, FL 32801 www.aecom.com

407.425.1100 tel 407.246.7002 fax

# Table 1. Proposed Drainage Improvement Projects

Project and Location	Existing culvert(s)	Current Invert Elevation (FT NAVD)	Proposed Project(s)	Proposed Invert Elevation (FT NAVD)
Chapel Branch Creek @ Rich Rd	2-30" RCP	US 13.91/13.95 DS 13.79/14.16	Add 2-42" RCP's	US 13.85/DS 13.80
Daughtrey Creek East	1-30" RCP	US 13.78/DS 13.06	Replace w/ 1-36" RCP	US 13.78/DS 13.06
Branch so. of Rich Rd				Administration (Assembly Assembly Assem
Popash Creek @ Heather	1-24"x38" ERCP	US 19.3/DS 19.24	Repl. w/1-29"x45" ERCP	US 19.3/DS 19.24
250'no. of Heather Ln	1-24"x38" ERCP	US 19.25/DS 19.45	Repl. w/1-29"x45" ERCP	US 19.58/DS 19.57
300' no. of Heather Ln	1-24"x38" ERCP	US 19.4/DS 19.14	Repl. w/1-29"x45" ERCP	US 19.59/DS 19.58
400' no. of Heather Ln	1-24"x38" ERCP	US 19.39/DS 19.41	Repl. w/1-29"x45" ERCP	US 19.61/DS 19.60
530'no. of Heather Ln	1-24"x38" ERCP	US 19.59/DS 19.59	Repl. w/1-29"x45" ERCP	US 19.63/DS 19.62
900'no. of Heather Ln	1-24"x38" ERCP	US 19.73/DS 19.82	Repl. w/1-29"x45" ERCP	US 19.73/DS 19.69
Stroud Creek @Skis Rd	None	N/A	2-30"RCP	US 15.98/DS 15.95
Palm Creek @ Ruden Rd	1-30" CMP	US 15.1/DS 15.8	Replace with 1-30" RCP	US 15.3/DS 15.2
Unnamed 2 Creek -	1-34"x48"CMP	US 6/DS 5.2	Replace w/2-42"RCP	US 6/DS 5.2
Driveway Culvert s	1-34"x48"CMP	US 4.78/DS 4.39	Replace w/2-42"RCP	US 4.7/DS 4.3 US 3.51/DS3.2
			A CANADA MANAGAMAN AND AND AND AND AND AND AND AND AND A	
Marsh Point @Twin Brooks Rd	None	N/A	2-24" RCP	US 7.0/DS 6.9
Bayshore Creek Pond @ Nalle Grade Park	None	N/A	30-acre wet detention pond and pump station	N/A

(e) 0011.854.704 xst 2007.842.704 AECOM
Orlando, FL 32801
Www.secom.com

MODEA

# Exhibit A Creek at Rich Road

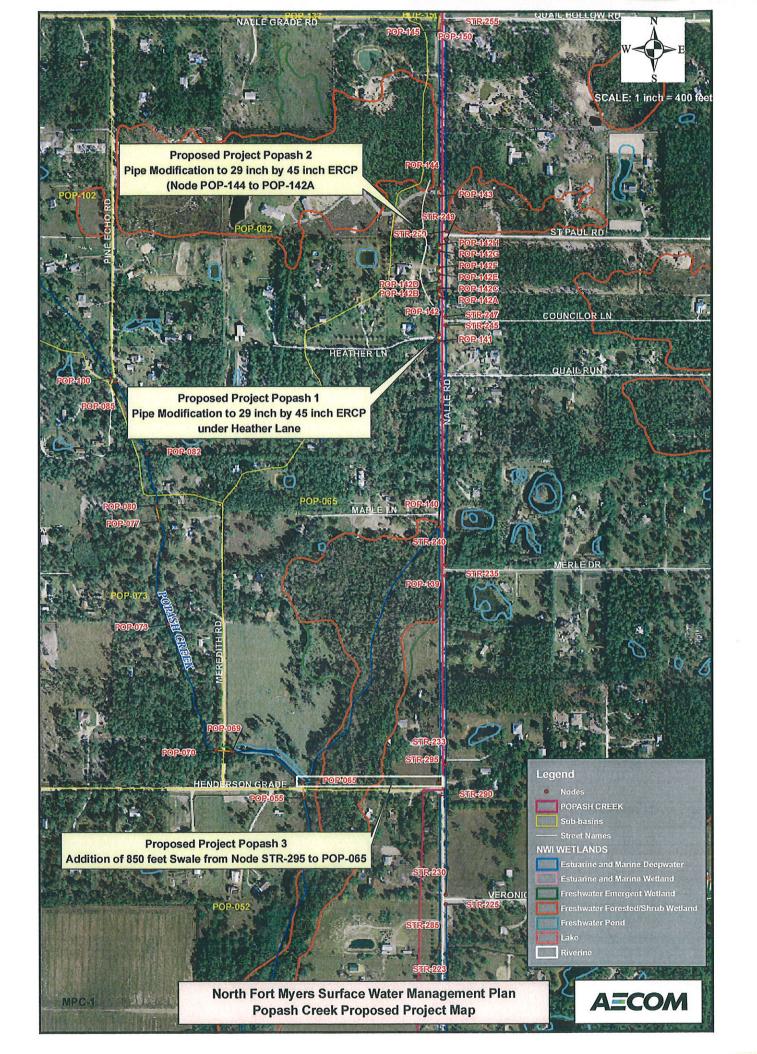


# Exhibit B Daughtrey Creek East Branch South of Rich Road



# Exhibit C Popash Creek Driveway Culverts

# Exhibit D Stroud Creek at Skis Road







# Exhibit E Palm Creek at Ruden Road





# Exhibit F Unnamed 2 Creek Driveway Culverts



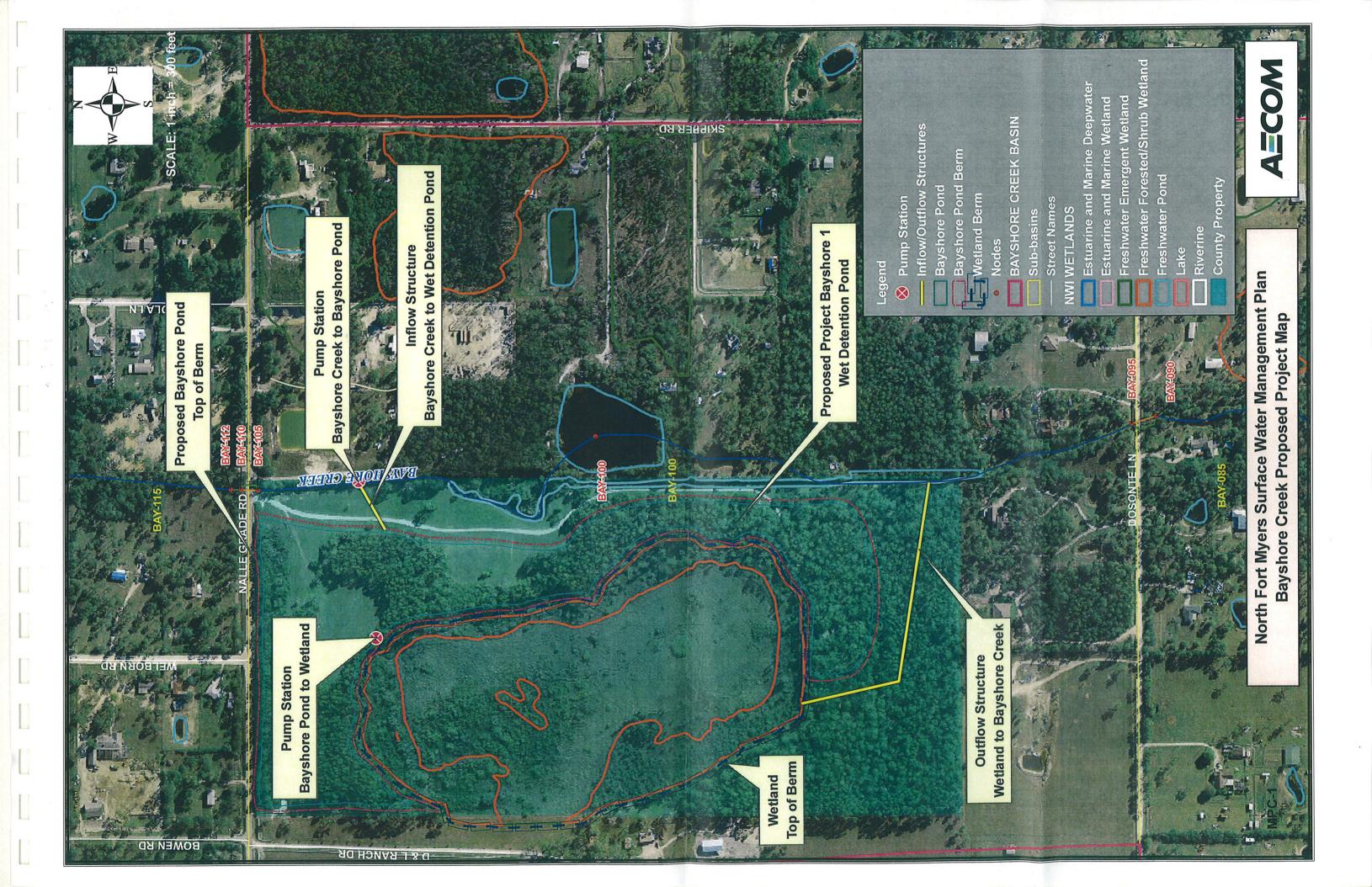


# Exhibit G Marsh Point Creek at Twin Brooks Road





# Exhibit H Bayshore Creek Pond at Nalle Grade Park



# Exhibit 18

# FIRM Flood Insurance Rate Maps (2008)

For NFMSWMP Area

This map is for use in administering the Notional Flood Insurance Program. It does not necessarily identify of areas subject to flooding, particularly from local drivings sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

consume for postative updated or additional fixed hazard information.

To obbit more detailed information in uses where Base Fixed Elevations (IEFE) under floodways have been determined uses as a crossrage for control to Fixed F

construction and/or loopsquam management.
Constail Base Flood Elevations shown on this map apply city landward of
0.0 North American Vertical Datum of 1988 (NAVI) 88), Users of this FIRM should
be aware that coastal flood elevations are elso provided in the Summany of
Silkwater Elevations table in the Flood Insurance Study report for this jurisdiction.
Elevations shown in the Summany of Silkwater Elevations table should be used for
construction and/or flood/plain management purposes when they are higher than
the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydrautic considerations with regard to requirements of the National Flood insurance Porgram. Floodway widdits and other pertinent floodway date are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this

The projection used in the preparation of this map was Florida State Plane west zone (FIPSCONE 502). The horizontal datum was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in may features across jurisdiction boundaries. These differences do not affect the accuracy of this Ring.

Flood elevations on this map are referenced to the North American Versical Datum of 1988. These flood elevations must be compared to structure and ground elevations remained to the same vertical detum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Surrey chaite at http://www.ngs.nca.a.gov or contact the National Geodelic Survey a efollowing address:

NOW, NINGS12 National Geodetic Survey SSMC-3, #9202 1315 East-West Highway Stver Spring, Maryland 20910-3282 (301) 713-3242

voo seon apa www/kath

Base map information shows on this FIRM was provided in digital format by the ice County GIS Department. The road centerine information was constructed based on orthopholography produced at a scale of 1°=100° from actial imagery flown in 1998 and updated using exhopholography dated 2002 and 2005. The surface water features were also constructed based on orthopholography produced at a scale of 1°=100° from erafal imagery flown in 1998.

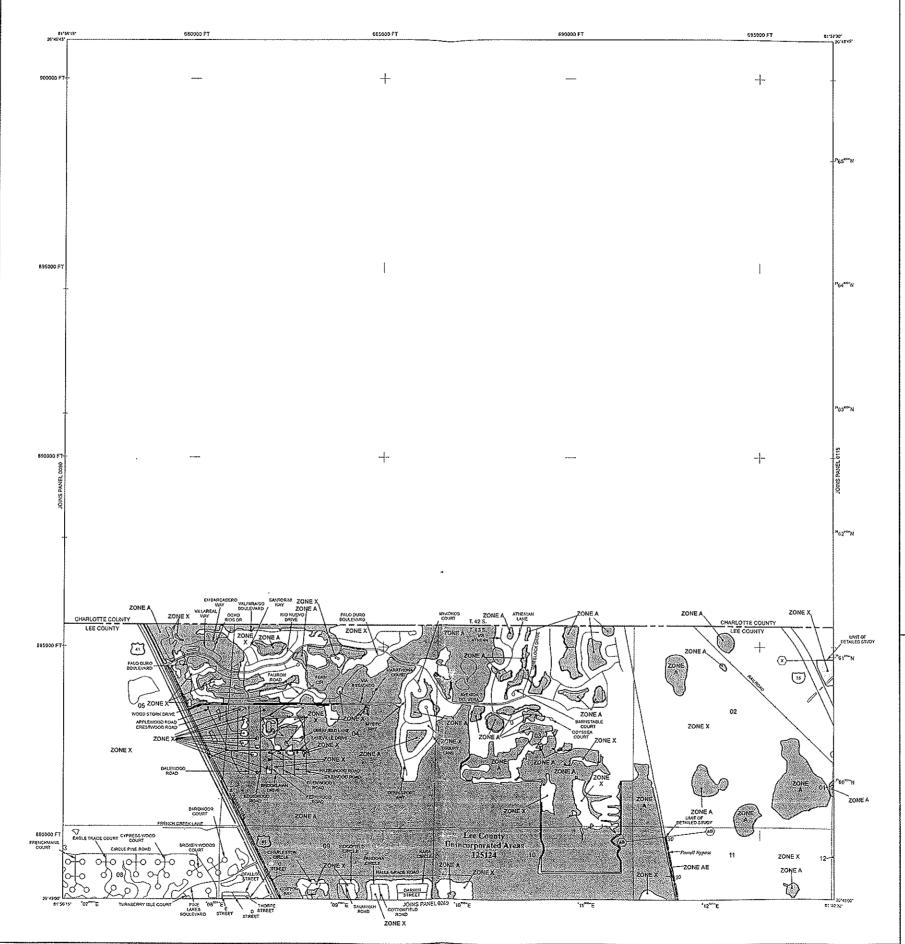
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Contact the FEMA Map Service Center at 1-800-358-9618 for information on available products associated with this FIRM, Available products may include previously issued Letters of Map Change, a Flood insurance Study report, andfordigital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-389-9500 and its weakles at https://www.msc.frama.gov.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, prease call 1-877-FEMA MAP (1-877-395-2627) or visit the FEMA website at <a href="http://www.lema.gov">http://www.lema.gov</a>.



# LEGEND

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

The 1% annual flood (109 year flood), also thome as the base flood, is the flood that has a 1% device of being exceled or exceeded in any years year. The Special Flood instead sen is the analysis of proceedings by the 1% small of share flood, shoes of Special Flood instead challed Excess 4.4, 4.4, 4.8, 4.9, V, and Vs. The Base Flood Elevation is the water surface excellent flood in 1% entired device flood.

ZONE AE

Base Flood Elevations determined.

Fixed depths of 1 to 3 feet (usually areas of ponding); Base Road

Flood depths of 1 to 3 feet (vousity sheet flow on sloping termin); premage depths obtenmined. For arross of provide lan flooding, velocities also determined. ZOME AO

Costal food not with velocity hazard (were action); Ease Rood Desitions determined.

ELOCONYAY AREAS IN YOUR AR

the channel of a stream plus any adjacent floodplass larges that must be kept free t so that the 1% amount chance flood can be carried without substantial increases.

OTHER FLOOD AREAS

OTHER AREAS

Areas determined to be qualified the 0.2% around chance foodplain.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

Floodata's boundars

-----Zone Diboundary

CRRS and OPA bounds

Boundary dividing Special Flood Hazard Area zones and toundary dividing Special Flood Hazard Areas of different Base Flood Servations, flood depths or flood velocities.

----Race Floori Fleutrico Coe and valver elevation in feet\* Base Flood Elevation value where uniform within zone; elevation in feet\* (EL 667)

Cross section the

87'07'45", 32'22'30"

Geographic coordinates referenced to the North American Datum of 1983 (1993 B31). Western Remisohere 1276711N 1000-moter Universal Transverse Mercator grid values, zone

600000 FT 5000-host grid ticks: Florida State Filane coordinate system, West zone (FIPSZONE 0902), Transverse Mercetor projection

DXSS10 x

MAP REPOSITORY
Refor to Esting of Map Repositories on Map index

EFFECTIVE DATE OF COUNTYINDS FLOOD BISURANCE RATE MAP ANGUEZO, 2003

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to county-ride mapping, refer to the Community Nun History table located in the Road Ensurance Study report for this furth-distan-

To determine if Good Insurance is available in this community, contact your Insurance seek or cull the historical Food Insurance Procedure 1-600-635-6620.

MAP SCALE 1" = 1000"

PANEL 0095F

# **FIRM**

FLOOD INSURANCE RATE MAP

LEE COUNTY. FLORIDA AND INCORPORATED AREAS

PANEL 95 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTRIBUTA

NUMBER PANEL SUFFER



MAP NUMBER 12071C0095F

EFFECTIVE DATE AUGUST 28, 2008

This map is for use in administering the National Flood Insurance Program, It does not necessarily identify all meas subject to feoding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information is areas where Base Flood Elevations (BFEs) and/or floodways have been detained information.

(BFEs) and/or floodways have been determined theirs are encouraged to consulf the Flood Profess and Floodway Data and/or party of Schwarf Elevations tables contained within the Flood Insurance Study (FS) report that accompanies the FIRM types and the FIRM types and the FIRM represent rounded whole-foot elevations. These BFEs allowed according to the food insurance study purposes only and should not be used according to the process only and should not be used as soid source of flood elevation information. Accordingly, flood elevation data presented in the FIRM constitution and/or floodyptain management.

construction ander recorption management.

Coastal Sac Pirod Elevations shown on this map apply only landward of 0.0" North American Vertical Datum of 1988 (NAVO 88). Users of this FIRIA should be mare that coastal flood elevations are also provided in the Summary of Stocket Floor provided in the Summary of Stocket Floor Stocket Clevations table in the Flood Insurance Study report for this jurisdation. Constitution and the Summary of Stocket Flooredons table should be used for constitution and the Summary of Stocket Flooredons table should be used for constitution and or place in the clevations shown on this First.

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The projection used in the preparation of this map was Florida State Plane west some (FPS2ONE 902). The hortzontal datum was NAD 33, GRS89 sphoroid Differences in discin. The hortzontal datum was NAD 33, GRS89 sphoroid Differences in discinct spheroid, projection of State Plane zones used in the production of FIRMs for adjacent justification may result in slight positional differences in map features across jurisdiction boundaries. These differences do not effect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1989. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information reparting conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1989, via the National Geodetic Survey worbsite or <u>Intelligence</u> of the National Geodetic Survey worbsite or <u>Intelligence</u> or contact the National Geodetic Survey at the Soloning address:

NGS Information Services NOAA, NINGS12 National Geodetic Survey SSMC-3, #8202 1315 East-West Highway Stiver Spring, Maryland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for bonch marks shown on this map, please contact the Information Services Branch of the National Geodelic Survey at (301) 713-3242, or visit its website at http://www.ngs.ngsr.gov.

Base map information shown on this FIRM was provided in digital format by the Lee County GIS Department. The most centerine information was constructed based on orthopholography produced at a scale of 1°=100 from serial imagery flowin in 1998 and updated using orthopholography dated 2002 and 2005. The surface water features were also constructed based on orthopholography produced at a scale of 1°=100 from serial imagery flows in 1998.

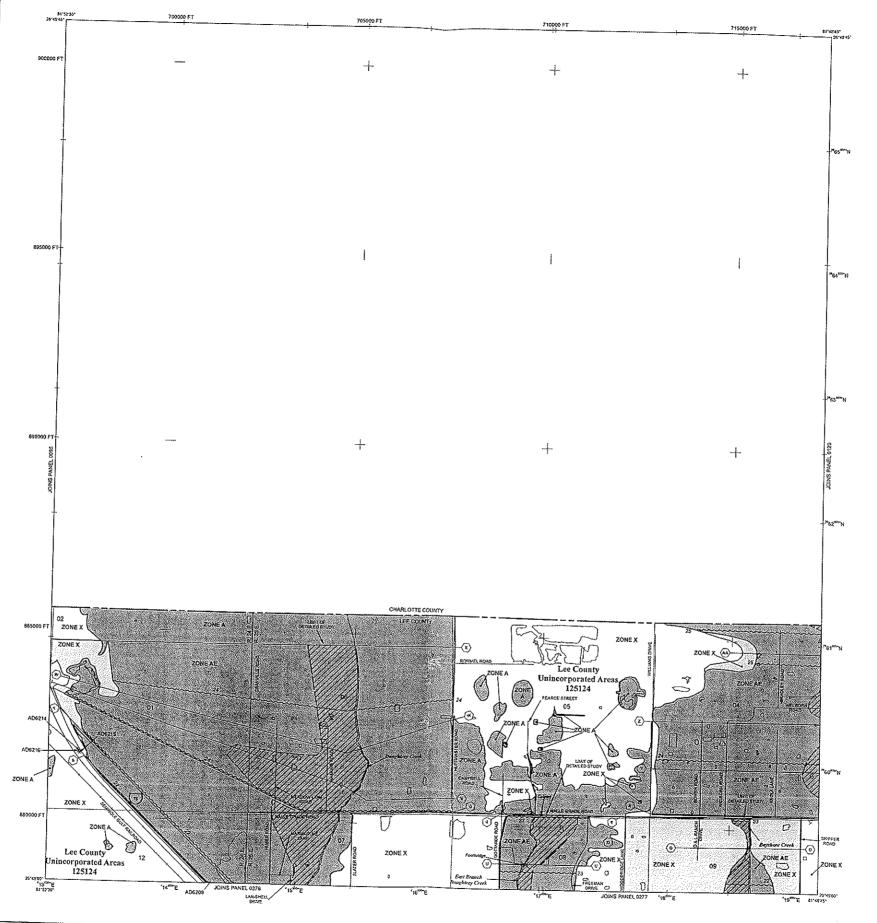
This map reflects more detailed entire singery town in 1998.

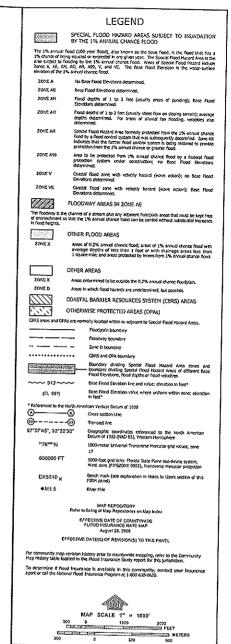
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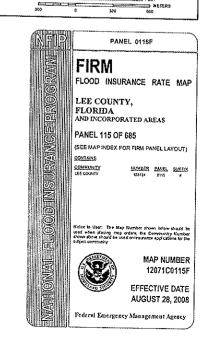
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If you have questions about this map of questions concerning the National Flood insurance Program in general, picase cell 1-877-FEMA MAP (1-877-335-2627) or visit the FEMA wobske at <a href="http://www.fema.gov.">http://www.fema.gov.</a>







This map is for use in administering the National Flood Insurance Program, It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hexard information.

To obtain more detailed information in areas where Base Flood Elevations (BFGs) and/or floodways have been determined, users are encouraged to consult the Flood Profices and Floodways have been determined, users are encouraged to consult the Flood Profices and Floodway Data and/or summery of Stiffwest Elevations tables contained within the Flood Insurance Study (FlS) (epoil that accompanies this FIRM, Lers should be aware that BFGs are alreaded for food stay and the FlFM representations of whole-flood relevation information. Accordingly, flood elevation flood related in the FlFM propose of construction and/or floodpring management.

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NGS Information Services NGAA, NNGS12 National Geodetic Servey SSMC-3, 89202 1315 East-West Highway Siver Spring, Haryland 20910-3282 (301) 713-3242

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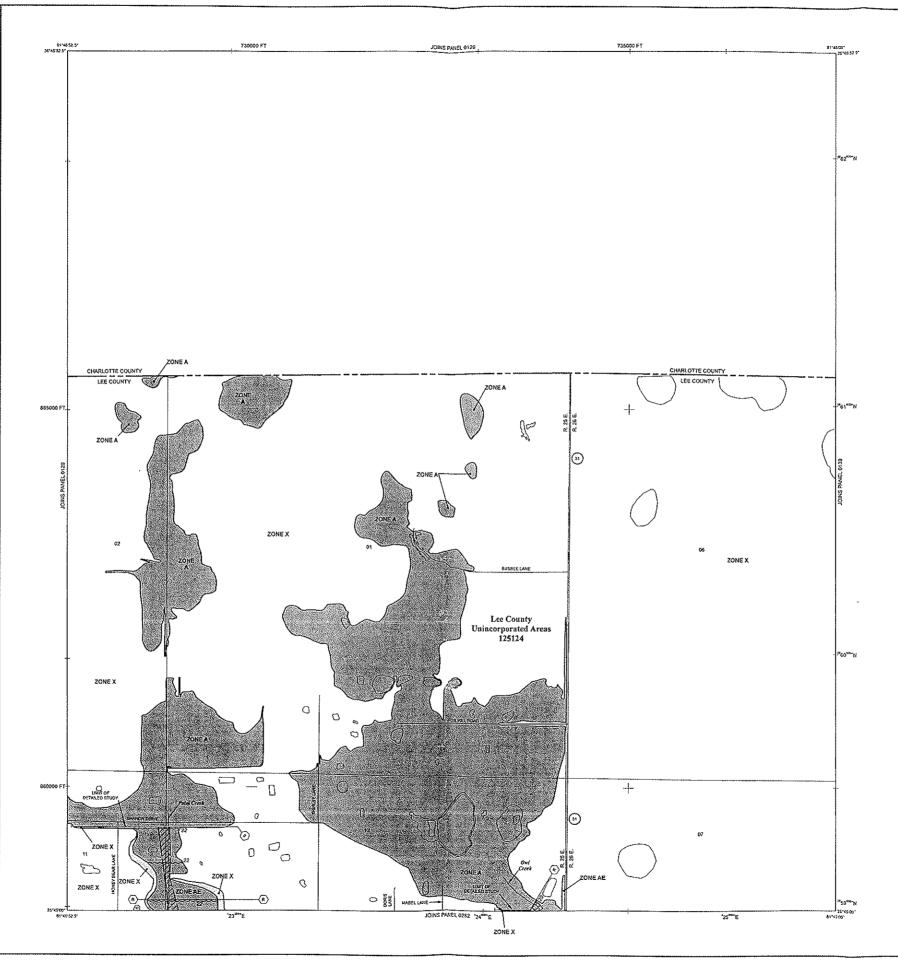
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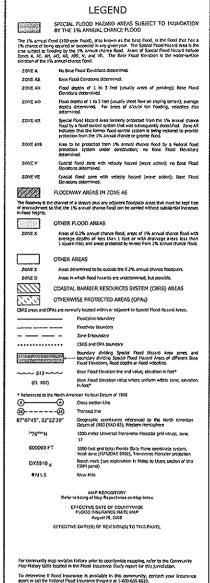
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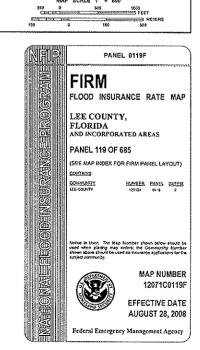
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Contact the FEMA Map Service Center at 1-800-38-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of May Change, a Flood Insurance Study report, and/or object versions of this map. The FEMA Map Service Center may also be reached by Pax at 14-03-38-9600 and It website at http://www.msc.fema.org/

If you have questions about this map or questions concerning the National Floor Insurance Program in general, please call 1-877-FEMA MAP (1-877-338-2627) or visit the FEMA website at http://www.fema.gov.







MAP SCALE 1" = 600"

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NGS Information Services NOAA, NNGS12 National Geodete Survey SSMC-3, 92002 1315 East-West Highway SWer Spding, Maryland 20910-3202 (301) 713-3242

To obtain current elevation, description, and/or location information for bonch marks shown on this map, please contact the Information Services Branch of the Mational Geodetic Survey at (301) 713-3242, or visit its website at <a href="https://www.nbg.nbaa.com">https://www.nbg.nbaa.com</a>.

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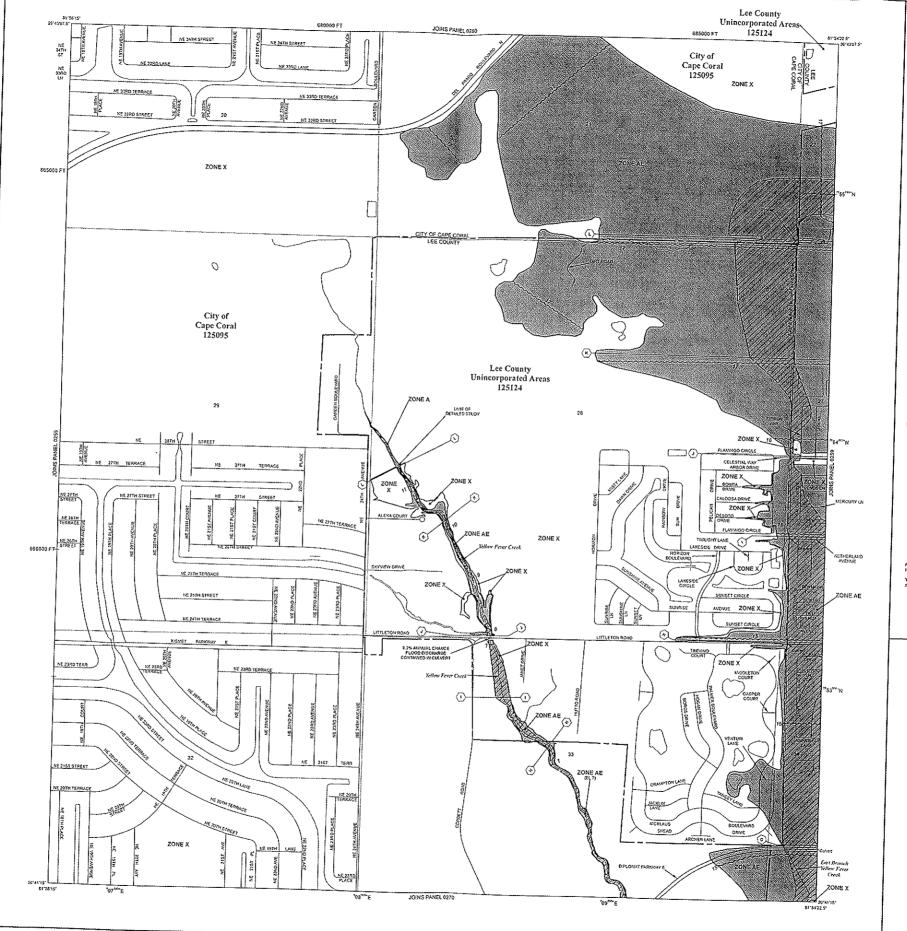
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If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1.877.FEMA MAP (1.877.336-2627) or visit the FEMA website at <a href="https://www.fcma.gov.">https://www.fcma.gov.</a>





70VC 40

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

The 1% arrays Food (100 year food), also known as the base flood, is the flood that has a 1% chance of being appaided or proceded in any privary part. The Spood Food Reard know is the reas solighted flooding by the 1% armail of those Food, arms of Spood Food Reard Arms is the case of Spood Food Reard Arms is the privary of the Spood Food Reard Control (A. E., 48), 40, 47, 49, 7, 8 and 16. The Ease Food Exception is the water purious forceton of the 15 arms of others from 15 arms of those food Food Reardson is the water purious forceton of the 15 arms of others from 15 arms of other from 15 arms of others from 15 arms of other from 15 arms of ot

No Base Flood Elevations determined Ente Envil Elections deferment

ZONE AE

Flood depths of 1 to 3 feet (usuely areas of ponding); Base Flood Flood depths of 1 to 3 feet (usually sheet flow on sloping terraint); average decisis determined. For avers of plurier fron Flooding, victories also

Social Food Natival and formerly protected from the ANI, annual chance food by a fixed control system that was subdependly detertified. Zons AR inspects that he former allowed control system is being noticed to provide protection from the BNI annual distance of graiter fixed.

Area to be processed from 1% arrual chance flood by a Federal flood crosection system under construction; so Base Flood Elevations

ZONE V Coastal flood zone with velocity hazard (mane action); no Base Flood

Control food tone with volcoly hazard (nave action); Base Food

FLOODWAY AREAS IN ZONE AS

the channel of a stream plus any adjacent floodplant prees that must be legst free so that the 1% across chance flood can be carried without a betterful across an

OTHER FLOOD AREAS

Areas of 0.2% acround chance flood; areas of 1% around chance flood with average depths of less than 1 foot or with dealingle areas less than 1 square mile; and areas protected by leness from 1% around chance flood.

ZONEX

Areas desermined to be putside the 0.2% around chance floodplain.

Areas in which flood hazards are undetermined, but possible. COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAS)

CERS areas and CRAs are normally located within or advacant to Source Evolu-

\_\_\_\_ Floodway boundary Zone Dibounders

CERS and OPA boundary

Soundary dividing Special Flood Hazard Area Tones and in boundary dividing Special Flood Hazard Areas of different Euro Flood Ethnisons, Flood depths or Flood response. Base Flood Elevation line and value; elevation in feet\* Base Flood Elevation value where uniform within zone; plevate

(El SS)) As exercised to the land

Transact line 87\*07'45", 32\*22'30 Geographic coordinates inferenced to the North American Deturn of 1983 (IAAD 83), Western Herrisphere

276 N 600000 FT 5000-foot grid tidde: Florids State Flane coordinate system, West zone (FIRSZONZ 6902), Transverse Moreator projection Berch mark (see explanation in Rices to Users soction of this filter) power.

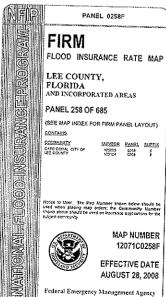
0X5510 x

MAP REPOSITORY
Refer to sisting of Map Repositories on Map Index EFFECTIVE DATE OF COUNTYWIDE FLOOD DISURDANCE RATE MAP August 25, 2007 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to coordywide mapping, refer to the Contraunity History table fectiod in the Food Inturence Study report for this levislation. To determine if flood insurance is evaluable in this community, contact your Insurance agent or call the Record Proof insurance Program at 1-600-603-6609.

MAP SCALE 1" = 500"

150 0 150 300



consulted for possible updated or additional lood hazed information.

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NGS Information Services NOAA, N/NGS12 National Geodetic Survey SSMC-3, #9202 SSMC-3, #9202 1315 East-West Highway Siver Spring, Maryland 20910-3262 (301) 713-3242

To obtain current elevation, description, and/or location information for bond marks shown on this map, please contact the Information Services Brand of the National Geodetic Survey at (301) 713-3242, or visit its website a http://www.ngs.ngez.gov.

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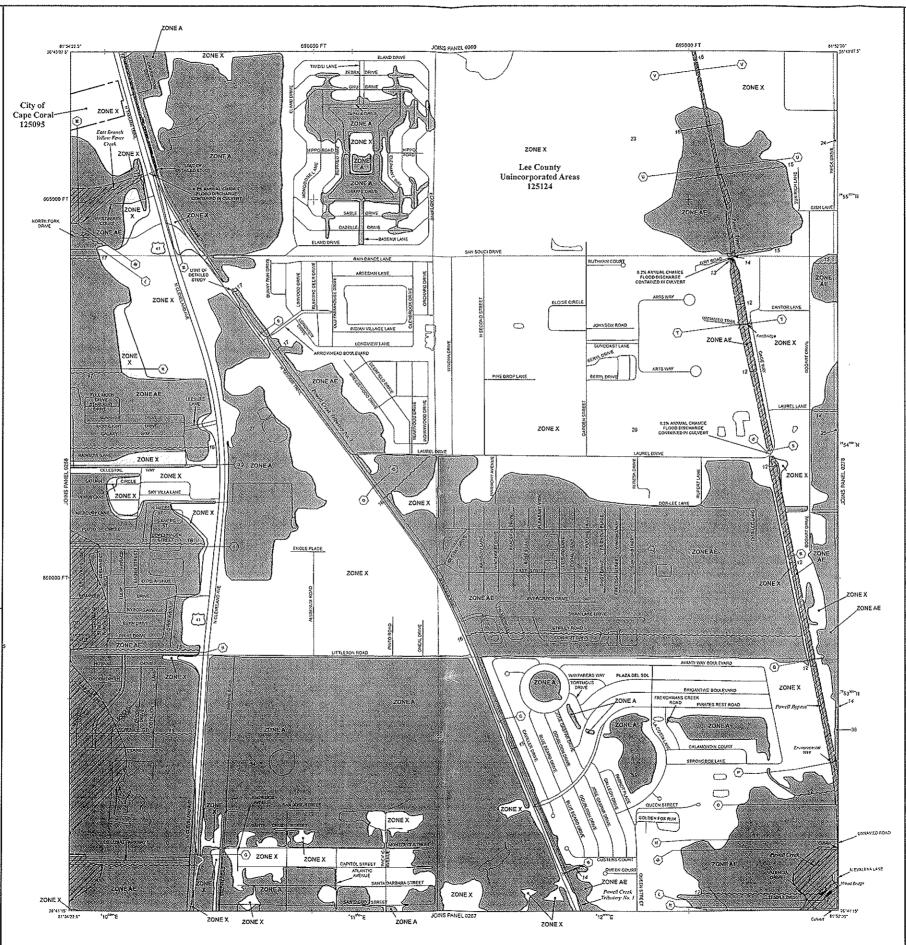
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Contact the FEMA Map Service Conter at 1-600-358-9616 for information on available products associated with this FIRM. Available products may include proviously issued Letters of Map Change, a Flood insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be transhed by Fax at 1-803-358-9620 and its whoshe at high-discourance terms.

If you have questions about this map or questions concerning the NaSonal Floor Insurance Program in general, please call 1-877-FEMA MAP (1-977-399-2927) of visit the FEMA website of <a href="http://www.fema.gov.">http://www.fema.gov.</a>



### LEGEND

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

The 1% around Bond (100 year Bond), also brown as the base Bond, is the Food that has a sky drawn of being regarded or exceeded in any given year. The Sporal Bond Haward Area is the seas scheen to Bondon by the 1th Around scheen Bond, around a Sporal Bond Bond Bond Around Area is the seas scheen to Bondon by the 1th Around scheen Bondon Bondon by the 1th Around scheen Bondon Bondon is the waster-oursteen Bondon of the Star Bond Bondon in the waster-oursteen Bondon of the Star Bondon Bond

Ho Base Flood Elevations determined.

20NF AS Ease Flood Stevetons Cotemands

Flood depths of 1 to 3 feet (resulty areas of pending); Ease Flood Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For briss of shural fan flooding, velocities also

determined.

Special Flood Massed Area formerly profected from the 1% arrival chance from by a Flood sector's system that mas subsequently detertified. Zone AR indicates that the former flood exchain system is began exclived to provide protection from the 1% arrival chance or yeater flood. ZONE AR

Area to be protected from 1% across chance food by a Federal Food protection, system under construction; no Base Food Elevations

Questal filled zone with velocity hazard (wore action); no Base Road ZONEV

Coastal Rood zone with volocity hazard (wave action); Base Food Baselines determined 2015 VE

ELOCODIVAY AREAS IN ZONE AR

The flooking is the channel of a Stream plus any adjacent floodplain creas that must be kest free or excessioned so that the 1% amoust chance flood can be carried instruct substantial horizons in facts training.

OTHER FLOOD AREAS ZONEX

Areas of 0.2% annual chance flood, areas of 1% annual chance flood with everage displits of less than 1 floot on with disastage areas less than 1 square mile; and areas protested by leveos from 1% annual distinct flood.

ZONEX ZONE O

strong determined to the authors the 8.2% acroust phases Foodplate. areas in which fixed hazards are undatamined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

CBRS creas and OPAs are normally located within or educant to Special Food

English hamba - - Zong D boundary

CERS and OPA bounds:

Boundary dividing Special Flood Hazard Area coins and toundary dividing Special Flood Hazard Areas of different Date Flood Equations, Flood depths or Flood velocities. S13 --- Base Flood Elevation line and value; elevation in Text

Base Flood Devictor value where uniform within zone; elevation in feet, \* Referenced to the North American Vertical Dators of 1988

Gross section Unit 87\*07'45", 32\*22'30"

176\*\*\*N

Geographic coordinates inferenced to the North American Drawn of 1953 (NAD 63), Western Hersbarkers 1000-ringer Universal Transverse Morastor god values, zone

600000 FT 5000 Keat gold Sicker Florida State Piene coordinate system, West zone (FIPSZONE 0902), Transverse Mercator projection Bonch mark (see exploration in Rotes to Users Section of this FIRM ponel) DX5510 ×

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MAP REPOSITORY
Refer to Faling of Map Repositories on Map Index EFFECTIVE DATE OF COUNTYVICE FLOOD DISURANCE RATE MAP App. at 23, 200 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table boated in the Flood Insurance Study report for this jurisdiction. To determine if flood insurance is avoitable in this community, contact your fosuragent or call the Netland Flood Insurance Program at 1-609-638-6520.



PANEL 0259F

FIRM

FLOOD INSURANCE RATE MAP

LEE COUNTY. FLORIDA AND INCORPORATED AREAS

PANEL 259 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY 195075 0009 / 195124 0009 /

liston to User. The Map Number shown below shows bused when placing map ensem; the Community Number shows about 50 used on howence applications for the



MAP NUMBER 12071C0259F

**EFFECTIVE DATE** AUGUST 28, 2008

This map is for use in administering the NaBonal Flood insurance Program. It does not necessarily identify at areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional food hazard information.

consisted for possible updated or patitional Bood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or flood/ways have been determined, users are encouraged to consult for Flood and the Flood and the flood and the flood and the flood insurance Stuff (FIS) report that accompanies tables contained the areas and the flood insurance Stuff (FIS) report that accompanies that FIEM along the areas the flood insurance stuff (FIS) and the accompanies that FIEM areas the flood insurance stuff (FIS) and the accompanies are insured for flood insurance stuff (FIS) and the stuff (FIS) areas the safe source of flood elevation information. Accordingly flood elevation data presented in the FIS report should be utilized a name of the flood insurance stuff (FIS) and the flood insurance stuff (FIS) and the flood insurance stuff (FIS) are stuffed in the fisher purposes of constitution and/or flood/pain management.

construction analog floodpish management on this map apply only landward of Constall Base Flood Eleverations shown on this map apply only landward of 0.0 North American Vertical Celtum of 1988 (NAVD SS). User of this FIRM should be aware that locastal flood elevations are also provided in the Summay of Stituator Elevations table in the Flood Insurance Study report for this purisidation. Elevations shown in the Summay of Stituate Elevations table should be used for constituction and/or floodpain management purposes when they are higher than the elevations shown on the FIRM.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydrautic considerations with regard to requirements of the National Flood Insurance Plagram, Floodways visitins and other perfunent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Contain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this turnfriction.

The projection used in the preparation of this map was Floride State Plane west zone (FIPSZONE 902). The horizontal datum was NAD 83, CRS80 spheroid. Differences in datum, aspheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdiscions may result in sight positional differences in may features across jurisdiction boundaries. These differences do not affect the accuracy of this Firms.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information reparting conversion between the National Goodetic Vertical Datum of 1929 and the North American Vertical Datum of 1989, visit the National Goodetic Survey at the following address:

NGS Information Services NOAA, WNGS12 National Geodetic Survey SSMC-3, #9202 1315 East-West Highway Säver Spring, Maryland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at

Base map information shown on this FIRAI was provided in digital format by the Lee County CIS Department. The road centerine information was constructed based on orthophotography produced at a scale of 11-100 from arrial imagety flown in 1998 and updated using orthophotography dated 2002 and 2005. The strates water features were also constructed based on orthophotography produced at a scale of 11-100 from a main largery flown in 1998.

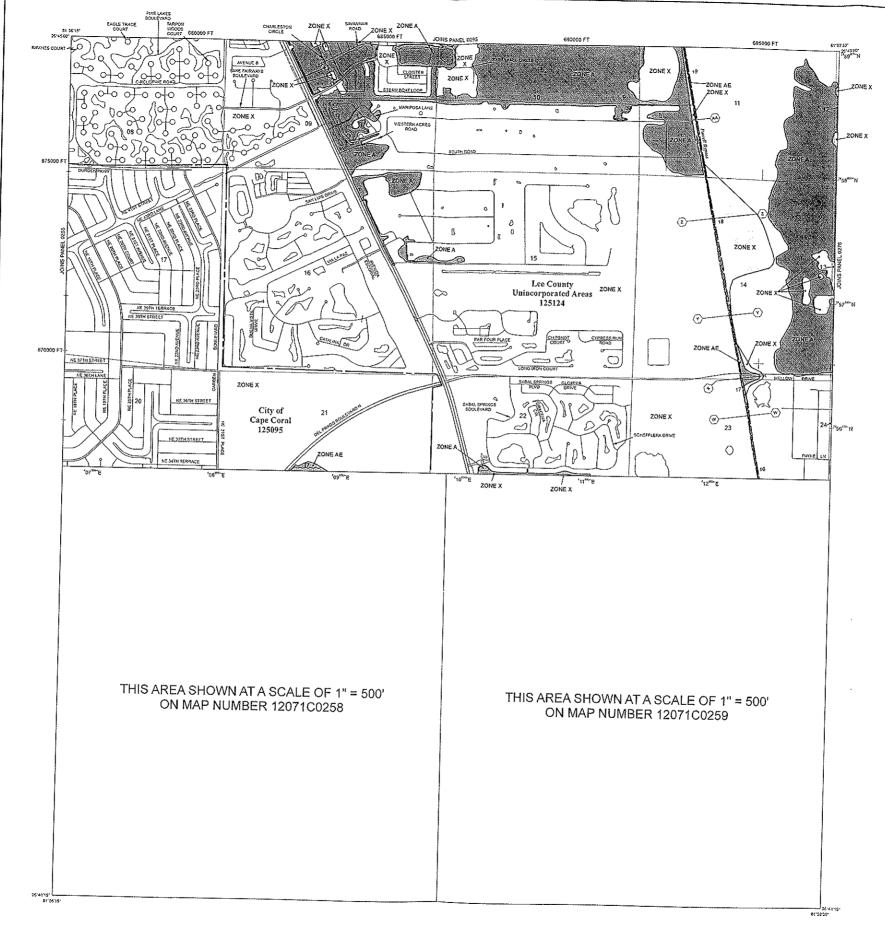
This map reflects more desided and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodyshins and floodyshin that those shown on the previous FIRM for this jurisdiction. The floodyshins and floodyship that were transferred from the previous FIRM may have been adjusted to contime to these new stream channel configurations. As a result, the Flood Profess and Floodway Data lables in the Flood Insurance Staff Report (which contains sunthensave hydraulic date) may reflect stream channel distances that differ from what is shown on this map.

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Contact the FEMA Map Service Center at 1-800-358-8616 for intermition on available products associated with this FIRM. Available products may include proviously issued Leiters of Map Change, a Ficod Insurance Study report, and/or diplat versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msp.fema.gov.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please cas 1-527-FEMA MAP (1-877-335-2627) or visit the FEMA website of http://www.fema.cov.



# LEGEND

SPECIAL FLOOD HAZARO AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual Good (100 year Bood), sito known as the base Good, is the Bood that hay a 1% chance of being equaled or exceeded in any given year. The Spousif Food Secret Area is the rear soften in Booding by the 1% exmall dehate Food, secret of Spousif Food Secret Area is stored to Booding by the 1% exmall dehate Food, secret of Spousif Food Maximi and Law Tond A. A.E., A.K., A.R., A.R., A.R., A.R., N.P., Y., and VE. The Base Food Secretion is the water surface destinated the 1% amongst dehate food.

No Sase Flood Elevations determined.

200F 46 File Food Feedbay deaming

Frood depths of 1 to 3 feet (usually areas of ponding); Rase Flood Flood depths of 1 to 3 feet (usually sheet flow on stoping terrain); wherego deaths determined, for areas of standard fan flooding, relocates also obtainmed.

ZONE AR

Special Proof Material Area formerly proceded from the \$1% annual chance food by a food coursel system that was subsequently deserting. Zone As included that the former food coursel system is being notional for previous protection from the \$1% annual chance or greater flood.

Area to be pretected from 1% annual chance food by a Peseral food protection system under toristruction, so Baye Flood Elevations

Coastal food zone with velocity hazard (wave action); no Ease Food ZONEV

Coestal food zone with visitity factor (move action); Base Rood

FLOODWAY AREAS IN ZONE AE

e channel of a stroom plus any adjacent foodpasin areas that must be kept free to that the 1% armual chance Bood can be comed without subclarual increases

OTHER FLOOD AREAS

Areas of 0.2% aroust chance food; areas of 1% aroust chance food with antriage depths of less than 1 foot or with distinger areas less than 1 square rike; and areas protected by leness from 1% aroust chance food.

Areas in which flood hazards are undetermined, but possible

COASTAL BARRIER RESCHIRGES SYSTEM (CERS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

CERS areas and Oras are normally invaled within or actioners to Soveral Brown Married Lives

Foodway boundary -------Zone D boundary CERS and OPA bouncary \*\*\*\*\*\*\*\*\*\*\*

Boundary dividing Special Road Hazard Area zones and boundary dividing Special Front Hazard Areas of different Ense Road Devisions, flood depths or flood velocities. 2004

Base Flood Edvation line and value; elevation in first\* Sate Flood Elevation value where conform within some; ele-in faces

• Referenced to the Hon

Transact line

87\*07'45\*, 32\*22'30 Geographic coordinates referenced to the North American Determ of 1983 (NAD 83), Western Homischere

-76\*\*-M 1000-meter Universal Transverse Morestor grid values, some 600000 FT

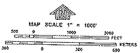
Bench mark (see explanation in Notes to Uters section of this ●I.\$1.5 No. No.

MAP REPOSITORY
Refer to Esting of IMp Repositories on IMp Index

EFFECTIVE DATE OF COUNTYMBE FLOOD HIS URANCE RATE MAP AND 15 28, 2008 EFFECTIVE DATEISLOF REVISIONS TO THIS DAINS

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Inturance Study report for this laritection.

To determine if flood insurance is available in this community, control your Insurance agent to call the Kational Flood Insurance Program at 1-500-619-8520.



PANEL 0260F

FIRM FLOOD INSURANCE RATE MAP

LEE COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 260 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY SUMMER PANEL SUFFIX
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155 COMMUNITY 125121 GCG F

histor to User. The Map Number shows brow should be used when placing map orders, the Community Humber shows above should be used onincurance applicators for the



MAP NUMBER 12071C0260F

EFFECTIVE DATE AUGUST 28, 2008

This map is for use in administering the National Flood insurance Program II does not necessarily identify all areas subject to flooding, particularly from local disinage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

consumes for postacio uporates or adocumentacion nazion information.

To obbiai more detailed information in sensi where Base Florid Elevations (BFE9) and/or floridy has been determined, users are encouraged to consult the Flood Freiders and Floodwarp Lots and/or Summary of Stiffwater Elevations lables occlaimed within the Flood Insurance Study (FIS) report that accompanies five FIRM. Letters should be arrained that the Flood Insurance Study (FIS) report that accompanies from FIRM these should be arrained that the stiffwater florid in the FIS should not be used to the solid source of flood elevation information. Accordingly, flood elevation data presented in the FIS sport should be utilized in conjunction with the FIRM for purposes of construction and/or floodylain management.

Coastal Base Flood Elevations shown on his map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood devalions are also provided in the Summary of Stithwater Elevations table in the Flood Insurance Study report for the jurisdiction. Elevations table in the Flood Insurance Study report for the jurisdiction. Elevations table shown in the Summary of Stithwater (Elevations table should be used for construction endlor floodplain management) purposes when they are higher than the clevations above on this Flood.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard or requirements of the hallows Flood insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for his jurisdiction.

Contain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Florida State Plane west zone (FIPSZONE 902). The horizontal datum was IAJD 83, GRS98 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not street the accuracy of this FIRM.

Flood clievations on this map are referenced to the North American Vertical Dalum of 1988, These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Cooletic Vertical Dalum of 1952 and the North American Vertical Dalum of 1989, visit the National Geodetic Survey website at <u>Berytheore upon normal new or contact</u> the National Geodetic Survey at the following address:

NGS Information Services NDAA, N/NGS12 NDAA, NMGS12 National Geodotic Survey SSMC-3, #9202 1315 East-West Highway Siver Spring, Maryland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for bonch marks shown on this map, please contact the Information Services Branch of the Netional Geodetic Survey at (301) 713-3242, or visit its website at <a href="https://doi.org/10.1016/j.jupen.com/nos.nosa.goz/">https://doi.org/10.1016/j.jupen.com/nosa.goz/</a>.

Base may information shown on this FIRIA was provided in digital format by the Lee County GIS Department. The road contentine Information was constructed based on orthopholography produced at a scale of 1°-100′ from acrial imagery flows in 1998 and updated using enthipholography dated 2002 and 2005. The surface water features were also constructed based on orthopholography produced as a scale of 1°-100′ from earliar imagery produced as a scale of 1°-100′ from earliar imagery hardware.

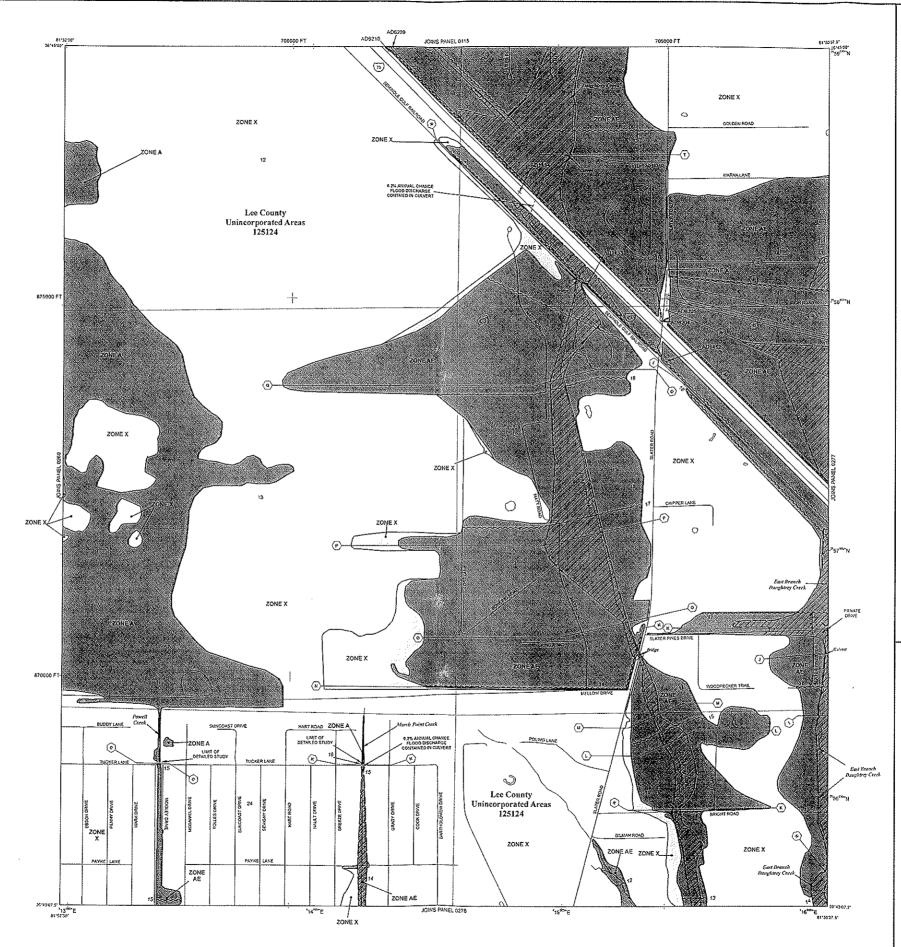
This map reflects more detailed and up-locatio stream channel configurations than those shown on the previous FRM for this pristiction. The Boodpains and Boodways that were transferred from the previous FRM may have been adjusted to codem to these new stream channel coefigurations. As a result, the Flood Frortes and Floodway that shock in the Flood insurance Story Report (which the Flood Frortes) and Floodway that shock in the Flood insurance Story Report (which were the Flood Floodway that shows in the Flood insurance Story Report (which shows the Floodway Interest that shows results in the results of the Floodway that shows the shows the results of the Story (which is a shown on this map.

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Contact the FEMA Map Service Conter at 1-809-358-9516 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 14-80-358-920 and its website of <a href="https://doi.org/10.100/j.net/10.1009/j.net/10.10

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please cal 1-877-PEMA MAP (1-877-936-2627) or visit the FEMA website at <a href="http://www.feme.gov">http://www.feme.gov</a>.





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

ZONE A

20NE AD

20NE 499

ZONEX

ZONE D

The 1% armed food (100-year flood), also increases the base food, is the food that has a 1% decay of being equated or exceeded in any given year. The Special Flood hazed have face is the area solved in flooding by the 1% in-haust discuse flood, shared of Special Flood hazed where is the area solved in Gooding by the 1% in-haust discuse flood, shared of Special Flood hazed hazed Zones, A. E., Alf., Alf., Alf., Alf., 8/9, V, and VE. The flood Flooding is the instance surface decaybor if the 1% in-small discuss flooding.

No Ease Flood Elevations determined

Rood depths of 1 to 3 feet (usually areas of gondary); Bank Food ZONE AR

Food depths of a to 3 feet (usually sheet flow on sloping termin); average depths determined. For areas of abund feet fooding, velocities. Mo determined.

Special Florid Hazard Area Formerly protected from the 1% annual distric-feed by a florid screen specim that was substances by recording. Zone Ak-knows to the former florid control system is being restored to provide protection from the 1% annual district or greater florid. 20% 4B

Area to be protected from 1% enrors chance fixed by a federal fixed protection system under construction; no fixed fixed Envisions agreements.

ZONEY County flood zone with velocity hazard (wave action); so Base Food TONE VE

Coastal food zone with velocity hazard (wave action): Base Proof Develors determined FLOODWAY AREAS IN ZONE AS

te channel of a stream plus any adjacent floodylain arrays that must be hapt free to that the 1% armus' chance flood can be extriced without subclassical increment

OTHER FLOOD AREAS

Areas of 0.2% emiss' chance food; ereas of 1% annual chance food with average depths of Mass than 1 foot or with distinage areas less than 1 source mile; and areas protected by factors from 1% annual chance food.

Areas determined to be outside the 0.2% across chance Food,

Areas in which food hazards are undetermined, but possible. COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CERS areas and ORAs are normally located within or adjacent to Special Flood Matrix diAreas

Roodway boundary

...... CERS and OPA tourcary

513 --- Base Flood Devation line and value; elevation in feet Base Flood Devarion value where uniform within zone; elevation in feet\* (EL 957)

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Geographic coordinates inflamented to the North American Documed 1983 (KAD-83), Western Hemisphere

>76<sup>∞</sup>N

600000 FT \$500-feet and ticks: Fonds State Plane coordinate system, West zone (FIFSZONE 0002), Transverse Mercator projection

Bench mark (see explanation in fixtes to Users section of this FIRM costs) DXSS10 v ●M1.5 River 14/e

MAP REPOSITORY Refer to Esting of Map Repositories on Map Inde

EFFECTIVE DATE OF COUNTYMDE FLOOD INSURANCE RATE MAP AUGUST 2003

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For commonly map revision history prior to countywide mapping, refer to the Community Hap History table located in the Flood Interence Study report for this funkticities.

To determine if food insurance is available in this community, contact your Insurance about or casithe National Food Insurance Program at 1-570-635-6570.

MAP SCALE 1" = 500"

259 6 500 1000 Ch-34,3 3 FEET 150 0

PANEL 0276F

FIRM FLOOD INSURANCE RATE MAP

LEE COUNTY,

FLORIDA AND INCORPORATED AREAS

PANEL 276 OF 685 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS.

COMMUNITY

loice to User. The Map Nurober shown bolow should be sed when placing map orders; the Community Nembe hown shows should be used on insurance applications for th



MAP NUMBER 12071C0276F

EFFECTIVE DATE AUGUST 28, 2008

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consulties for possible upositios of adaptional lood nazaro information.

To obtain most edistable disformation in areas where Base Flood Elevations (RFE3) and/or floodways have been determined, unset are encouraged to consult the Flood Frickes and Floodway Data and/or Summary of Silvester Elevations lables contained within the Flood Insurance Study (FIS) report that encompanies like FRM. Heres should be aware that RFEs shown on the FIRM represent rounded whole-foot devalons. These BFEs are intended for flood insurance study purposes only and thould not be used as the stoke source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastel Base Flood Elevations shown on this map spay only landward of 0.0" North American Vertical Datum of 1888 (NAVD 88). Users of this FIRIA should be aware that coastal flood devasions are also provided in the Summary of Stitivater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations 18th should be used for construction and/or Recolptain management purposes when they are higher than the clierations shown on the Summary of Stitivater (Perusions 18th Sexhould be used for construction and/or Recolptain management purposes when they are higher than the clierations shown on this Fire of the Recollegation shows the state of the Recollegation shows the state of the Recollegation shown on the Fire of the Recollegation shows the Recoll

Boundaries of the Boodways were computed at cross sections and Interpolated between cross sections. The Boodways were based on hydrautic considerations with regard to recytiments of the National Flood Insurance Program, Floodway widths and other pertinent Boodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control atructures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this

The projection used in the preparation of this map was Florida State Plane west core (FIPSZONE 902). The horizontal datum was N4D 83, GRS80 spheroid. Otherwise in dahm, spheroid, projection or State Plane zones used in the production of FIRMs for agreening institutions may result in significant positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRMs.

Flood devations on this map are referenced to the North American Vertical Datum of 1998. These flood elevations must be compared to structure and ground elevations are some vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1989, visit he National Geodetic Survey at the totomic at the Information of 1989, visit he National Geodetic Survey at the following address:

NGS Information Services NGA, NNGS 12 National Geodete Survey SSMC-3, 8920 1315 Estl-West Highway Saver Sping, Manyland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <a href="https://www.nas.nas.agev.">https://www.nas.nas.agev.</a>

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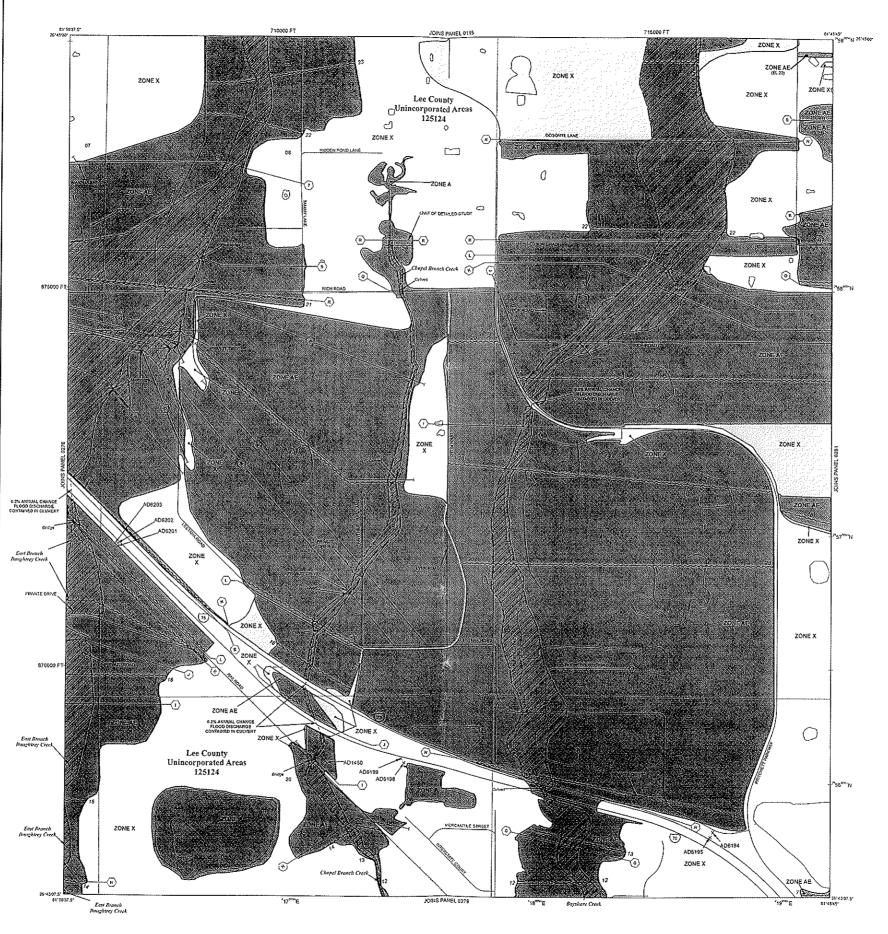
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If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <a href="http://www.fema.gov">http://www.fema.gov</a>.



### LEGEND

ZOVE AO

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

The 1% accusin Dood (100-year flood), also known as the base flood, is the flood that has a 1% others of trong equated or expected in any given year. The Spools Pood floored known face is the access selected to Booking by the 1% around chance flood in Access of Spools Pood floored indicate James A. R.E., M.M., AD. R.R. 189, V., and V.B. The Base Flood Exhaudion is the mater-surface deviation of the 1% accounts chance floor.

7.00% A No Ease Flood Directions determined.

200# 48 Pood depths of 1 to 3 feet (usually areas of ponding); Rase Food Rendings determined

Flood depths of 3 to 3 feet (usually sheet Four on sloping terrain); average depths determined. For areas of alluful fan flooding, velocities 230 determined.

Sometimes.

Seculal Food Hazard Area formerly protected from the 1% armal chance food by a food contain system that was subsequently described. Zone AR andwartes that the former food control system is being recipred to provide protection from tha 1% armal drawner or greater food.

ZONE ASS Area to be protected from 1% annual chance flood by a Foderal flood protection system under construction; no Base Flood Elevations determined.

Coasal Good sone with velocity hazard (mave action); no Base Flood Electrons dependent.

Coestal food zone with velocity hazard (mane action); Ease Food Streations determined.

FLOODWAY AREAS IN ZONE AE

re-choosed of a stream plus any adjacent Roadplain areas that must be kept free so that the 1% arroyal chance Road can be corried without substantial increases

Areas or 0.2% around chance flood, areas of 1% around chance flood with average depths of less than 1 floot or mith displayer areas less than 1 floot or mith displayer areas less than 1 floot or mith displayer areas areas less than 1 floot or 10 floor flood.

ZONE X OTHER AREAS

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COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

is are normalwhysicaled within or advaged to fine of F

Forders breaden Zone D boundary

CERS and OPA bounder

Sole Flood Equation line and value; election in feet (SL 937)

Sace Flood Elevation value where uniform within zone; cleration in feet\*

@-----® Transect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Medisphere 87'07'45', 32'22'30'

1000-mises thoversal Transverse Marcelon and values, 2006

5000-foot grid ticke: Fronta State Plane coordinate system, West zone (FIPSZONE 0001), Transverse Marcator projection

DX5510 ... €241.5

EFFECTIVE DATE OF COUNTYWOE FLOOD HISURANCE RATE WAP August 23, 2003 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PARKE

For community map revision history prior to countywide mapping, refer to the Community Rep History Diffe located in the Proof Instance Study report for this sensition. To determine if flood insurance is available in this community, contact your insurance agont or call the fascinal Flood Inturance Program at 1:500-633-6520.



MAP SCALE 1" = 500" 250 0 500 1099

PANEL 0277F

FIRM FLOOD INSURANCE RATE MAP

LEE COUNTY,

AND INCORPORATED AREAS

PANEL 277 OF 685 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY LEE COMMY NAMES PARES SUFFIX

MAP NUMBER 12071C0277F

EFFECTIVE DATE AUGUST 28, 2008

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local derivings sources at small size, The community map repository should be consulted for possible updated or additional flood hazard information.

consisted for possible updated or additional flood hazard information. To obtain more detailed information in areas where Baso Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Frodes and Floodway Data and/or Summary of Sithwater Elevations tables contained which the Flood instrates Study (F(S) sport float accompanies tables for the study of the service that BFEs shown on the FIRM represent rounded whole-food clevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIRM report should be utilized in conjunction with the FIRM for purposes of constitution endfor floodplatin management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0" North American Vertical Oatom of 1988 (NAVD 89). Users of this FIRM should Ou norm whethcan Vertical Josom or loss (IAVV) est, Usets or that First should be aware that coastal fillod elevations are also precised in the Summary of Stillwater Elevations table in the Flood Insusance Study report for this pirestifiction. Elevations shown in the Summary of Shivater Elevations shown in the Summary of Shivater Elevations shown in the Summary of Shivater Elevations table of year of the use of reconstruction and/or Rocopiation management purposes when they are higher than the clevations shown on this FIRMs.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydrautic considerations with regard to requirements of the National Flood insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood insurance Study report for this jurisdiction.

Cortain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection filessures" of the Flood Insurance Study report for information on flood control structures for this

The projection used in the preparation of this map was Floods State Plane west zone (FIPSZONE 902), The horizontal datum was NAD 83, GRS88 spherod. Differences in Astum, spherod. projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in stight positional differences in map features across prisidition boundaries. Those differences do not affect the occurrey of this FIRM.

Flood elevations on this map are referenced to the Itlanth American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical adoutm. For information regarding conversion between the National Geodetic Vertical Datum of 1983 and the North American Vertical Datum of 1988, with the National Geodetic Survey websits at <a href="https://doi.org/10.1007/j.com/1989/structure/">https://doi.org/10.1007/j.com/1989/structure/</a> or contact the National Geodetic Survey at the Idioning address:

NGS Information Services NGAA, NANGS12 National Geodetic Survey SSMC-3, 4522 1315 East-West Highway Siver Spring, Haryland 20910-3282 (301) 713-3242

Base map information shown on this FIRM was provided in diotal format by the base step withindood should have read centerfor elementary as constructed to be County (CE) Department. The road centerfor elementary as a constructed based on orthophotography produced at a case of 1°100° from earnal sinuspers from in 1998 and updated using orthophotography anded 2002 and 2008. The surface water features were also constructed based on orthophotography produced at a scale of 1°100° from anisk inversely from in 1999.

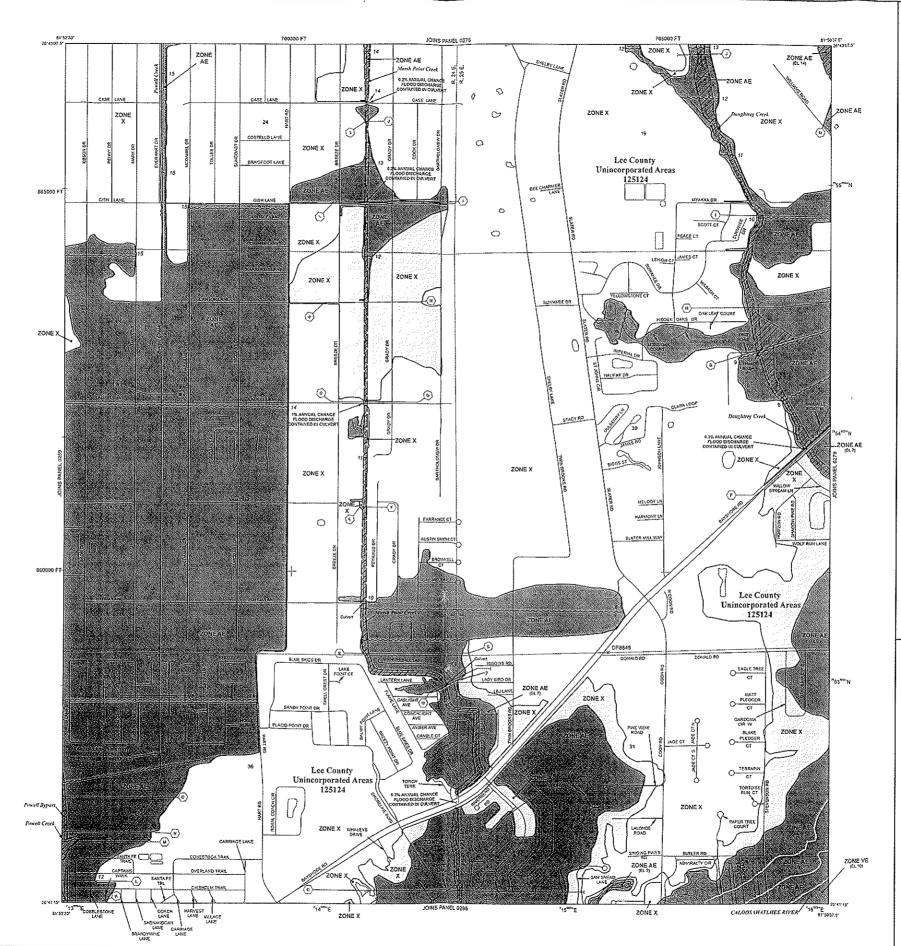
This map reflects more distalled and up-to-date stream channel configurations from those shown on the previous FIRM for this pirisdiction. The floodpains and floodways that were transferred from the previous FIRM may have been ediquided to cooffern to those new stream channel coefigurations. As a result, the Flood Profites and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to anneyations or de-cause. stitication. Because changes due to annexations or de-annexations may irred after this map was published, map users should contact appropriate

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map points; community map repository addresses; and a Listing of Communities table containing Notisianal Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the FEIMA htsp Service Center at 1-800-358-8615 for information on evaluable products associated with this FIRIM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital ventions of this map. The FEIM flats Service Center may also be reached by From at 1-80-359-3520 and is evoluted to the flat of the Change Service Service of the Change Insurance Study resource.

By rail and a record of this map or questions concerning the National Floor Insurance Program in general, please call 1-377-FEMA MAP (1-877-318-2827) of widt the FEMA website of interference lemanous.



# LEGEND

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

The 1% acres if cod (100-year flood), also haven as the base flood, is the flood that has a 1% chance of being equated or exceeded is any given year. The Space Flood Hearth Asia is the acres solghed to flooding by the 1% annual drawler God, when of Space Flood Hearth Asia is the acres solghed to flooding by the 1% annual drawler God, when of Space Flood Hearth Asia is the Asia solghed Hearth Asi

700% ¢6 Face Road Revolutions Actesticated. Fixed cepths of 1 to 3 feet (usually ereas of pondingly) base Fixed Executive determined.

Flood depths of 1 to 3 feet (usually sheet flow on slepting terrain); average depths determined. For excess of effects has flooding, velocities also intermined.

ZONE AR

continued.

Special Road Hazard Area factority protected from the 1% annual chance flood by a flood control system that was subsequently decorated. Zom AR indicates that the former load cooked system is being restored to provide protection from the 1% annual defence or general Fract.

Area to be protected from 1% control chance fixed by a Federal food protection system under construction; no Basic Flood Elevations determined.

Coastal fixed zone with velocity baserd (white action); no Base Fixed Constitute determined 20%EV

Coastal Food zone with velocity hazard (wave action): Erse Food Department determined ZONE VE

FLOODWAY AREAS IN ZONE AS

The floodway is the channel of a presum plus any adjacent floodplain areas that must be kept free of expressionant so that the 1% command channel roods can be curried without substantial increases in fixed beginn.

DOWER FLOOD AREAS

Areas of 0.2% annual chance flood; areas of 1% armust chance flood with average depths of less than 1 floot or with drakkage areas less than 1 square mile; and areas protected by lences from 1% annual chance flood. ZONEX

Americal representation the extracted the P-2PG approach change Department Areas in which flood hazards are unoccermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CERS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

CSRS areas and OPAs are normally boated within or adjacent to Special Floor

Positival boundary - Zone D boundary .....

CERS and OPA boundary

boundary dividing Special Road Plant Area roses and boundary dividing Special Road Ream of different Brief Road Planting Road States or food special road of the entitle Brief Road States frond Road States or food specialize

Ease Flood Deviation line and value; elevation in feet\* ~~~ 513~~~ (EL 587) Base Flood Storation value where uniform within zone; elevation in feet\*

References to the North American Vertical Datum of 1988 Cross section Line Transact kne 

871071451, 321221301 Geographic coordinates referenced to the North American Datum of 1983 (ISSD 83), Western Herrisphere

"76" N 1000 maler Universal Transverse Hercetor grid values, zone 600000 FT

\$300-foot grid titles: Florida State Plane coordinate system, West zone (FIPSZONE 0502), Transverse Marcator projection 0X5510 x Bench mark (see explanation in Notes to Liters section of this film's panel)

**◆161.5** River 1996

> MAP REPOSITORY Refer to issing of Map Repositories on Map ands. EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

To determine if flood insurance is available in this community, contact year Insurance epent or call the National Pood Insurance Program at 1-603-653-6530.

MAP SCALE 1" = 500" 150 0 150 300

PANEL 0278F

FIRM

FLOOD INSURANCE RATE MAP

LEE COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 278 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONSTRUCTLY



MAP NUMBER 12071C0278F

EFFECTIVE DATE AUGUST 28, 2008

This map is for use in administering the National Flood Insurance Program, it does not necessarily identify all oreas subject to feoding, porticularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood heared information.

consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or flood/ways have been determined, users are encouraged to consult the Flood Profess and Floodway Data and/or Summany of Silvariat Elevations tables contained within the Flood Instance Study (FIS) report that accompanies this Fifth, Users should be swate that BFEs shown on the Fifth representable some that the study of the stud

Coastal Base Flood Elevations shown on this map apply only isnoward of 0.0 North American Vestical Datum of 1988 (NAVD 88). Users of this FIRM should be avare that coastal flood elevations are also previded in the Summary of Stitwater Elevations that he is provided in the Summary of Stitwater Elevations take should be used for Elevations also when in the Summary of Stitwater Elevations take should be used for

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraufic considerations with regard to requirements of the National Flood insurance Porgram. Floodway widths and other persinent floodway data are provided in the Flood Insurance Study report for this printicident.

Contain areas not in Special Fleed Hazard Areas may be protected by fleed control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this intradiction.

The projection used in the preparation of this map was Florida State Plane west zone (FIRSZONE 902). The horizontal datum was NAD 83, GRS80 pobroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundarios. These differences do not affect the accuracy of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. Those flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1928 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at https://doi.org/10.1006/j.com/10.10

NGS Information Services NOAA, NNGS12 National Geodetic Survey SSMC-3, #9202 SSMC-3, #9202 1315 East-West Highway Säver Spring, Maryland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or totation information for bench marks shown on this map, please contact the information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at

Base map information shown on this FIRM was provided in digital formst by the Lee County CIS Department. The road controller information was constructed based on ontopholography produced at a scale of "1"100" from an

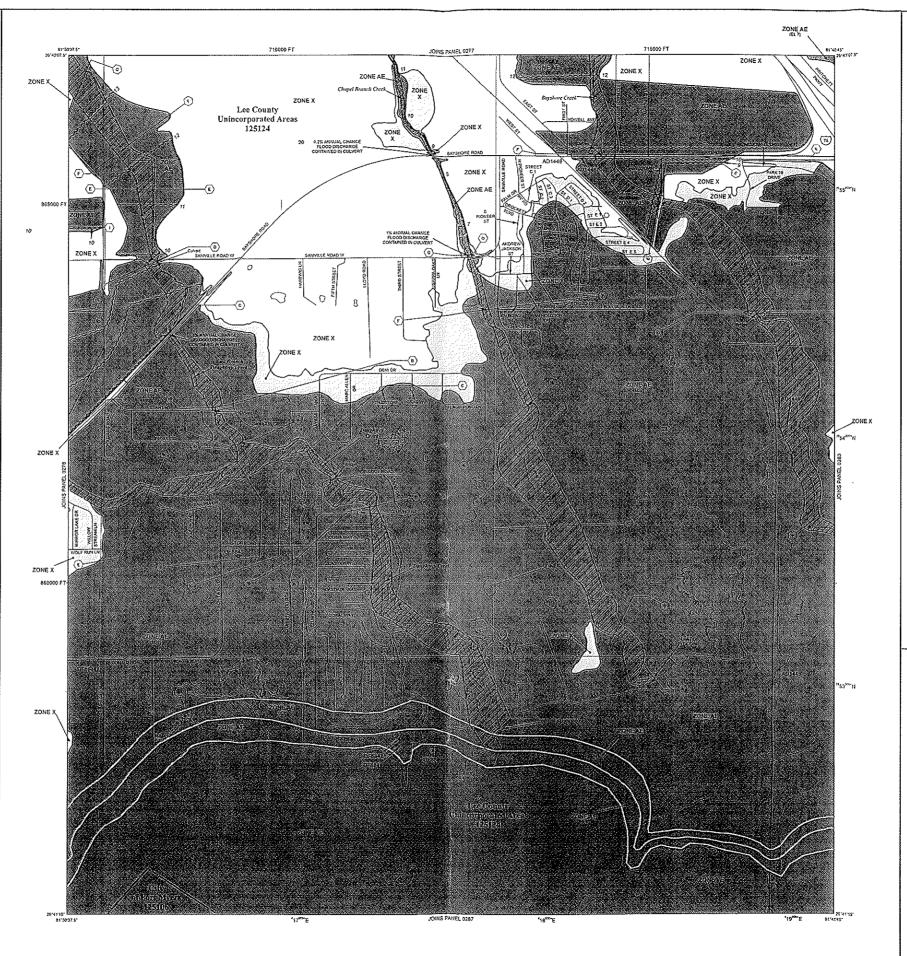
This map reflects more detailed and up-lo-date stream channel configurations than these shown on the provious FIRM for this jurisdiction. The floodplains and floodhays that where tears-fend from the previous FIRM may have been edysted to confirm to these new stream channel configurations, As a result, the Flood Perfects and Floodhays Data bables in the Flood Insurance Study Report (shirth contains authoritative hydrautic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to anaexations or de-annexations may have occurred after this map was published, may cress should contact appropriate community officials to verify current corporate finiti focations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panets; community map repository addresses; and a Listing of Communities table coatasing Mathemal Flood Insurance Frogram dates for each community as well as a listing of the panets on which each community is coated.

Contact the FEMA Map Service Center at 1-890-355-9516 for information on available products associated with this FRVM. Available products may include previously issued Letters of Man Chango. a Flood insurance Study report, and/or digizal versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-303-35-9620 and in weekley at https://www.mxs.fcma.org.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 4-877-EBMA MAP (1-877-335-2627) or visit the FEMA website at <a href="https://www.iema.cov">https://www.iema.cov</a>.



# LEGEND

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

The 1% provide food (100-year flood), also known as the base flood, is the flood that has a like device of heary equation or exceeded in any piece year. The Sporals Flood floated Arma is the east salighed to flooding by the 1% armaid chance flood floated flood and flooding by the 1% armaid chance flood floated flooding floodi

No Sase Flood Dieustions determined.

ZONE AE Late Bood Excellent determined

Food Cepths of 1 to 2 lest (usuely areas of ponding); have Food ZONE AH

Flood depths of 1 to 3 feet (usasky sheet flow on sloping terrain); average depths determined. For press of abusist fan fisoding, velocities also extermined. ZONE AR

obtainment.

Special Pool Fazzed Area formerly protected from the 1% annual chance from by a food certout system that was subsequently described. Zone AR indicates that the former food covicel system is being restored to provide anneation from the 1% annual drained by greater from.

ZONE ASS Area to be protected from 1% annual chance food by a Federal flood protection system under construction; no laste Flood Elevations

ZONE V Coastal food zone with velocity hazard (wave action); no Sese Flood

Coastal food some with relately hazard (mane action); Sess Food ZONEVZ

8/16 FLOODWAY AREAS IN ZONE AE

The final-duty is the channel of a stream plus any educant floodstain areas that must be kept free of conceptioner, so that the 1% armust drawer found can be considerable without authorises in those largets.

OTHER FLOOD AREAS

Areas of 0.2% panual chance flood; areas of 1% prince chance flood with average depths of less than 1 foot or with distinger areas less than 1 square mile; and press protected by levers from 1% cancel chance flood.

ZONE D

200E X

ZOVÆ AO

Areas determined to be coaside the 0.2% annual chance Roodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

CSRS areas and CPAs are normally located within or actioned to Sportal Fixed Hutland Areas

Roodway boundary

Zone Diboundary CERS and ON boundary \*\*\*\*\*\*\*\*\*\*\*\*\*

Boundary dividing Special Flood Haterd Area trans and boundary dividing Special Flood Haterd Area of different base. Flood Deviations, Good destine or flood revisions, Good destine or flood verbication.

~~~ 513~~~ (EL 937)

Base Flood Elevation line and value; elevation in feet! Ease Fleed Elevation value whose uniform within zone; elevation in feet.\*

Referenced to the Borth encan Vertical Datum of 1988 ----(X)

-76\*\*\*N

(3)----(3)

Transect line 87'07'45", 32'22'30"

Geographic coordinates referenced to the North American Docum of 1983 (1940-83), Western Herrisphare 1000-meter Linvarsel Transverse Marcelon grid velocis, zone

500000 FT 5000-fact prioration: Profice State Mane attoriorate system, West zone (FIPSCONE (601), Transverse Marcetor projection

Bench mark (see explanation in Notes to Utiers section of this FIRM pench) DX5510 x

◆M1.5 River Mile

> 314P REPOSITORY Refer to Esting of Map Repositories on Map Inde: EFFECTIVE DATE OF COURTYWIDE FLOOD INSURANCE RATE MAP AUGUST 23, 2003

To determine if food insurance is available in this community, contact your I agent or call the factors flood insurance Program at 1-500-633-6530.



150 0 150 500

PANEL 0279F

FIRM FLOOD INSURANCE RATE MAP

LEE COUNTY,

FLORIDA AND INCORPORATED AREAS

PANEL 279 OF 685 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

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LEE COLONIV 125124 C279 F



MAP NUMBER 12071C0279E

**EFFECTIVE DATE** AUGUST 28, 2008

This map is for use in administering the National Flood Insurance Program II does not necessarily identify all areas subject to feeding, particularly from local drivingo bouloes of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

consulted for possible updated or additional food hazerd information.

To obtain more detailed information is areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profites and Floodway Date and/or Sundy (FiS) report that accompanies to the first within the Profit insurance Study (FiS) report that accompanies the profit of the Profit insurance Study (FiS) report that accompanies the profit with the Profit insurance Study (FiS) report that accompanies the profit with the Profit insurance and cleaning purposes only and shared in the Profit insurance and cleaning purposes only and shared in the Profit insurance and the Prof

Coastal Base Flood Elevations shown on this map apply only landward of 0,0 North American Vertical Datum of 1935 (NAVO 88). Users of this FIRNA should be exace that coastal flood developions are also provided in the Summary of Silfwater Elevations table in the Flood Insurance Stody report for this phisaction. Elevations shown in the Summary of Silfwater Elevations table about the use of construction and/or Societies management purposes when they are higher than the clerations shown on this Films.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydrautic considerations with regard to requirements of the National Flood insurance Program Floodway widths and other persinent floodway data are provided in the Flood insurance Study report for this prindetion.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood insurance Study report for information on flood control structures for this principlicion.

The projection used in the preparation of this map was Florida State Plane west zone (FIPSZONE 902). The horizontal datum was NAO 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRMs.

NGS Information Services NOAA, N/NGS12 National Geodetic Survey SSMC-3, PS2020 1315 East-West Highway Siver Spring, Hanyland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the information Services Branch of the National Geodelic Survey at (301) 713-3242, or visit its website at http://duce.neces.com/purpless/ Acoreous as wearly office

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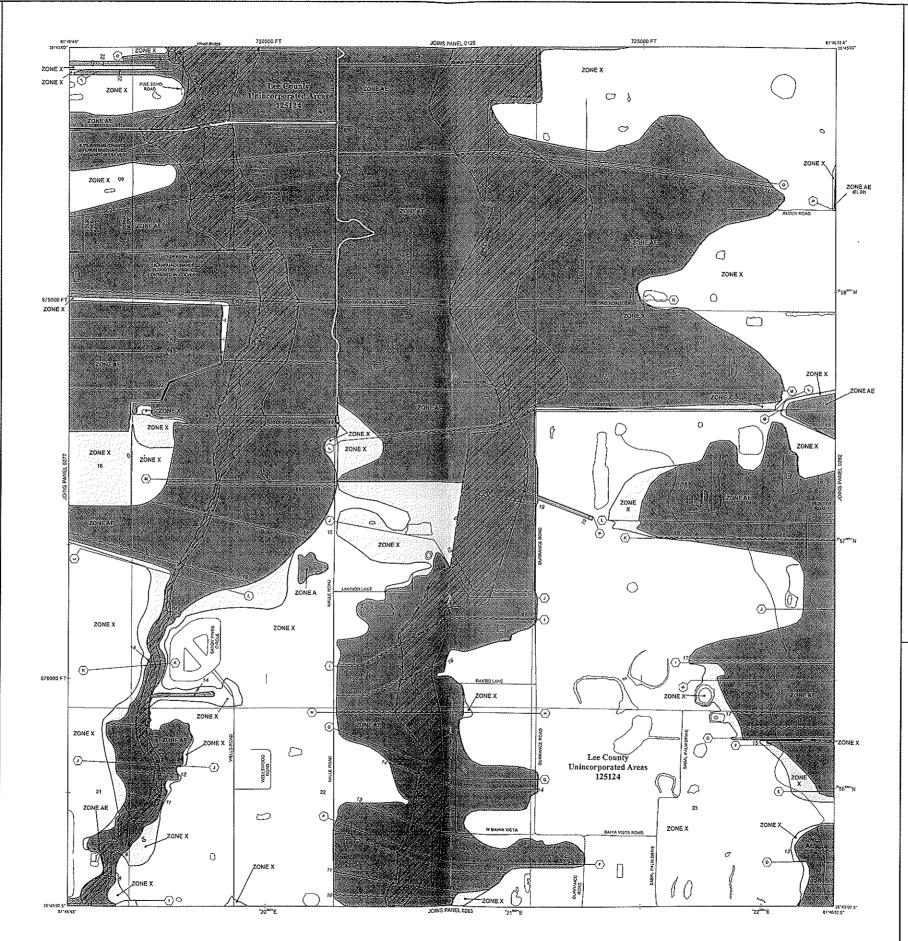
This map reflects more distalled and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodypains and floodypays that were transferred from the previous FIRM map share been adjusted to confirm to these new stream channel configurations. As a result, the Flood Profifes and Floodypay Data Islate in the Flood Insurance Study Report (which contains authoritative hydrautic data) may reflect stream channel distances that differfrom what is below on this map.

Corporate limits shown on this map are based on the boal data available at the time of publication, Because changes due to annexisions or de-annexisions may have occurred after this map was published, map users should contact appropriate community officials to write number of contact appropriate community officials to write number of contact appropriate community officials to write number of contact the publications.

Picase refer to the separately printed flap Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities Islae containing National Rood Insurance Pregram dates for each community as well as a listing of the panels on which each community is located.

Contact the FEMA Map Service Center at 1-600-356-9616 for information or avoilable products associated with this FIRM. Available products may include proviously issued Letters of Map Change, a Flood insurance Study report, and/or digital versions of the map. The FEMA Map Service Center may also be resched by Fixe at 1-800-358-9620 and in swebble of tight November Service.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please cas 1-877-FEMA MAP (1-877-338-2627) or visit the FEMA website at <a href="https://doi.org/10.1007/j.com/nma.goz">https://doi.org/10.1007/j.com/nma.goz</a>.



### LEGEND

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

The 1% amount fixed (160-year flood), also known as the base flood, is the flood that has a 1% dense of being squared or enceeded in any given year. The spoon those these these section to flooding by the 1% smooth dense to the section of society by the 1% smooth dense to the section of society flood flooding by the 1% smooth dense to the section of society flooding by the 1% smooth dense flood flooding to the section of society flooding that section of society flooding the section of section of sections of se

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ZONE AS Ease Flood Elevations determined. Food depths of 1 to 3 feet (escally areas of ponding); Sast Rood Develops determined

Flood depths of 1 to 3 feet (usually sheet flow on sloping tensin); average depths occurringed. For areas of Savriet for fooding, velocities also

Area to be protected from 1% enruel chance flood by a Federal flood protection system under construction; no Base Flood Devadors offerman

Coastal food zone with refoctly hazard (wave action); no Ease Food Florations reformings

Costal food zone with velocity hazard (mave adding); Sase Road Revoluces determined.

Mille FLOODWAY AREAS IN ZONE AE

re-monitorial.

The floodway is the channel of a stream plus any adjacent floodpoint arous that must be best free of emprechance so that the 1% aroust chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

Areas of 0.2% annual chance foods areas of 1% annual chance food with average depths of less than 1 foot or with drainage areas less than 1 square risks and areas protected by taxons from 1% annual chance food.

OTHER AREAS ZONEX

Areas determined to be outside the 0.2% arrust chance floodplain.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

Fizodolala boundar -----

Zone O boundary CBRS and OPA bounds

Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, Bond dopths or Food velocities. Stree Flood Elevation line and vi/us: elevation of feet\* Saye Rood Streetion value where uniform within sone, elevate in feet!

(EL 937)

-(A) Cross section time

87"07"45", 32"22"30" Geographic coordinates inferenced to the North American Detect of ISES (IVA) 63), Western Hernisphere

1000-mater Universal Transverse Mercator grid values, zone 600000 FT

5000-fact grid ticks: Fordu Sonz Pane coordinate system, West zone (FIPSDOME 0007), Transverse Mescator projection Bondh mark (une explanation in Notes to Usans section of this FIRM pane) DXSS10 X

IMAP REPOSITORY
Refer to Asting of Map Repositories on Map Index EFFECTIVE DATE OF COUNTYMOE FLOOD INSURANCE RATE MAP

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, roler to the Community
New History table incided in the Flood Informatic South project for this instruction.

To determine if Bood incurance is available in this community, contact your Insurance agent or call the historial Flood Insurance Process at 1-800-615-6616.

MAP SCALE 1" = 500"

FIRM FLOOD INSURANCE RATE MAP

LEE COUNTY. FLORIDA AND INCORPORATED AREAS

PANEL 281 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY LECOURTY

NAMER PANEL SIEFIX

Notice to User. The Map Number shown below should bused when placing map orders; the Community Number shown above should be used on insurance applications for the



MAP NUMBER 12071C0281F

EFFECTIVE DATE AUGUST 28, 2008

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local dealings sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, users are encouraged to consult the Flood Profess and Floodway Data and/or Summary of Stifvator Elevations takes contained within the Flood insurance Study (FIS) report that accompanies that FIRM, Users should be aware that 8FEs above on the FIRM represent rounded whole-flood elevations. These BFEs are intended for flood insurance and purposes only and should not be used as the sole source of flood study of the study of the sole of flood insurance should be utilized in longing-flood elevation data presented in the FIS espot should be utilized in conjunction with the FIRM for purposes of construction and/or floodphin management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0° North American Vertical Datum of 1988 (NAVD BB). Users of this FIRM should be water that coastal flood elevations are also provided in the Summary or Silvarder Elevations table in the Flood Insurance Study report for this jurisdiction. Blevations shown in the Summary of Silvarder Elevations table which be used for construction andler floodpain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the floodways were computed at cross sections and interpolate between cross sections. The Boodways were based on hydraulic consideration with regard to requirements of the National Phood Insurance Program. Floodway widths and other pertinent Boodway data are provided in the Flood Insurance Study report for this jurisdation.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this

The projection used in the preparation of this map was Florida State Plane west zone (FIPSZONE 902). The horizontal datum was NAD 83, GRS60 sphemid Offerences in datum, spheriod, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in sight positional differences in map features across jurisdiction boundaries. These differences do not affect the adoutacy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Dalum of 1988, These flood elevations must be compared to structure and ground elevations referenced to the some vertical datum. For information reparding conversion between the Notional Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, wist the National Geodetic Survey website at 1800/shwyx/ngs.noan.gov or contact the National Geodetic Survey at the following address:

NGS Information Services NGA, NANGS12 National Geodetic Survey SSIAC-3, 92202 1315 East-West Highway Siver Spring, Hagdand 20910-3252 (301) 713-3242

To obtain current elevation, description, and/or location information for bond marks shown on this map, please contact the information Services Branci of the National Geodetic Survey at (301) 713-3242, or visit its website a http://www.ngs.ngaa.gov.

Base map information shown on this FIRM was provided in digital formal by the Lee County GIS Oppartment. The trad centerfine information was constauted based on emboderingstally produced at a scale of "1-100" from activities and support flows in 1998 and updated using orthophicagraphy dated 2002 and 2005. The surface water flashers here also constructed based on othophotography produced at a scale of "1-100" from activities flower from in 1998.

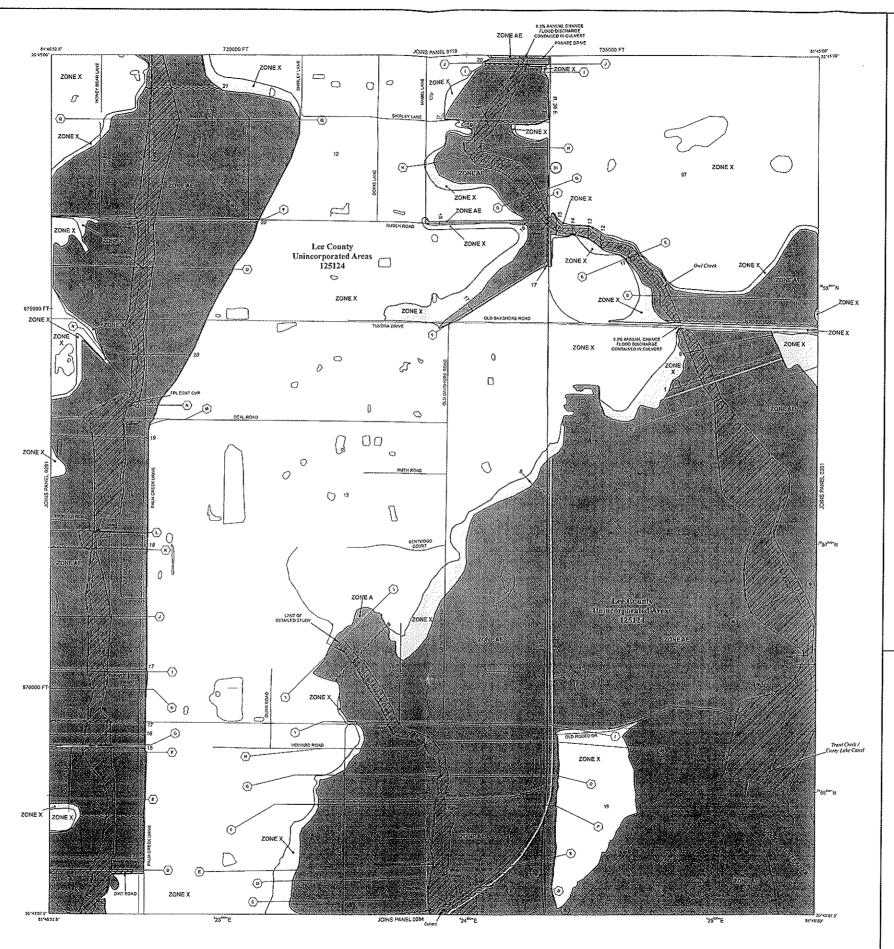
This map reflects more detailed and up-to-date stream channel configuration: than those shown on the previous FIRM for this furistiction. The floodotains are 

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate timit locations.

Please refer to the separately printed flap Index for an overview map of the county showing the layout of map panets; community map repository addresses; and a Listing of Communicias table containing National Flood Issuance Program dates for each community as well as a listing of the panets on which each community is located.

Contact the FEMA Map Service Center at 1-500-358-9616 for Information of available products associated with this FIRM, Available products may include available products associated with tast intern. Available products may include previously issued Letters of Map Change, a Flood Insusance Study report, and/o digital versions of this map. The FEALA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website of <a href="http://www.ense.fcma.gov.">http://www.ense.fcma.gov.</a>

If you have questions about this map or questions concerning the Netonal Floor Insurance Program in general, please call 1-977-FEMA MAP (1-977-338-2627) or visit the FEMA website at http://www.fema.gov.



# LEGEND

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

No Sesse Flood Elevisions determines ZONE AS Pare Food Stevetions determined. Food depths of 1 to 3 feet (county avens of panding); Bose Food Devotions determined

Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); everage depths determined. For areas of abund ten flowing, velocities also

Coastal flood zone with velocity hazard (want action); no Base Flood Floorings determined ZONEV Coastal food zone with velocity hexard (wave action); Sale Rood Develors determined. ZONE VE

FLOODWAY AREAS IN ZONE AS

OTHER FLOOD AREAS

The footbash is the channel of a stream plus any adjacent footbash areas that must be kept free of purpositment or that the 1% annual chance food can be carried without substantial increases in food heights.

ZONEX

Areas of 0.2% annual chance Rood; Areas of 1% annual chance Rood with average depths of less than 1 foot or with distinage areas less than 1 square mile, and went protected by levees from 1% annual chance food.

OTHER AREAS 205F Y

Arrest determined to be outside the 0.2% across chance foodship.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

Contrain horodon

\_\_\_\_ Doodway boundary -- Zong D boundary

Boundary dividing Special Food beard Area zones and boundary dividing Special Food haved Areas of different Base Food Eventuary, flood cepture or food vicioties, Base Flood Deviction line and value: elevation in feet\*

Base Flood Dovasion value where uniform within zone; elevation in first\* (EL 997) \* Referenced to the North American Vertical Datum of 1983

---(A) Cross section Une 87'07'45" 32'22'30"

Geographic coordinates referenced to the North American Datum of 1923 (INO 63), Western Hemisphere

176\*\*N 1000-meter Universal Transverse Franzism grid values, zone 600000 FT Bench mark (see explanation in Notes to Libers section of this ERM panel)

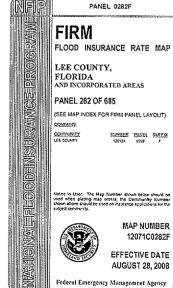
DXSS10 x ●M1.5

BAP REPOSITORY
Refer to I sking of Map Report ories on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE WAP August 28, 2005 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PARKS

For community map revision history prior to countywide masping, refer to the Community Map History table located in the Flood Insurance Study report for this furiosistion.

To determine if Road insurance is available in this community, contact your inconsection gat the National Road insurance Property as 1-500-639-6590. MAP SCALE 1" = 600"



This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drivinge sources of small size. The community map repetitory should be consulted for possible updated or additional flood hazard information.

consulted for possible updated or additional flood hazord information.

To obtain made detailed information in areas where Bass Flood Blevations (BFEs) and/or floodways have been determined, users one encouraged to consult the Flood Profices and Floodway Data and/or Summary of Silbwater Elevations tables contained within the Flood insurance Sludy (FlS) report find abcompanies in Si FRNI, Users school be partie that BFEs shown on the FRNI represent rounded whole-floot elevations. These BFEs are intended the FRNI represent rounded whole-floot elevations. These BFEs are intended the FRNI report and the Architecture of the Silbwater Silbwater

Coastal Baso Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Silvivater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Silvivate Fleerations table should be used for construction and/or flood/plain management purposes when they are higher than the clavations shown on this FIRM shown on the FIRM or the shown of the Silvivations.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood insurance Program. Floodway worths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by floor control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood insurance Study report for information on flood control structures for this principation.

The projection used in the preparation of this map was Florida State Plane west zone (PIPSZONE 902). The horizontal datum was NAP 83, CRSSO soheroid. Officences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for indirect principation of FIRMs for indirect particulations may result in slight positional differences in may feature some jurisdictions may result in slight positional differences for the accuracy of 9% FIRM.

Flood elevations on bits map are referenced to the North American Vertical Datum of 1988. These flood clevations metal be compared to structure and ground elevations referenced to the same vertical datum. For information reparating conversion between the National Geodetic Vertical Datum of 1939 end the North American Vertical Datum of 1938, visit the Notional Geodetic Survey website at https://dow.org.org.org/ or contact the National Geodetic Survey at the following address:

NGS Information Services NGAA, NINGS12 National Geodetic Survey SSMC-3, 92020 1315 East-West Highway SWer Spring, Maryland 20910-3282 (301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the information Services Branch of the National Geodelic Survey at (301) 713-0242, or visit its website at <a href="https://pubm.co.go.neaa.goz">https://pubm.co.goz.neaa.goz</a>.

Base may information shown on this FIRM was provided in digital formal by the Lee County GIS Department. The road contentine information was constructed based on enthopotography produced at a scale of 11\*100° from acid images; from in 1988 and updated using orthophography dated 2002 and 2005. The surface variet returnes were also constructed based on orthophotography produced at a scale of 1\*100° from acid kinagery from in 1938.

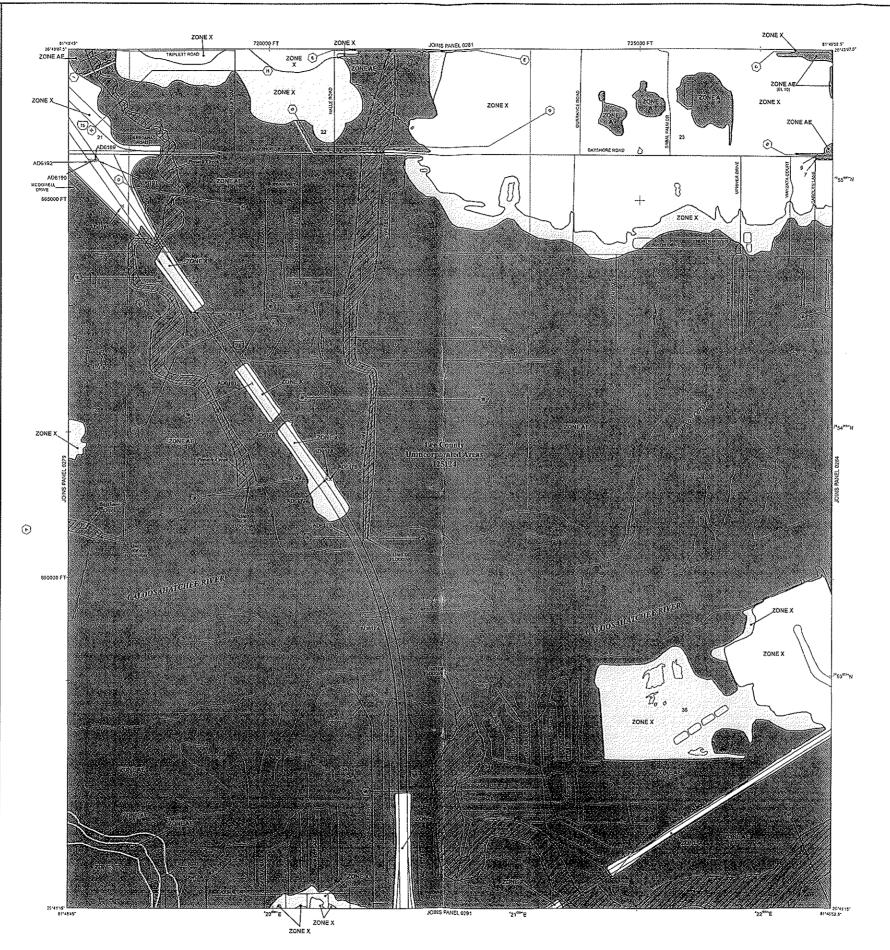
This may reflects more detailed and up-footier stream channel configurations than those shown on the provious FIRMs for this jurisdiction. The Soodpains and floodways that were transferred from the previous FIRMs may have been adjusted to corfirm to these new stream channel configurations, As a result, the Flood Profices and Floodway Data latkse in the Flood Insurance Study Report (which contains surboritative hydraufic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or do-annexations may have occurred after this map was published, may users should contact appropriate community diricals to verify current corporate final locations.

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Using of Communities table containing National Food leavance Program dates for each community as well as a Hsting of the panels on which each community to leasted.

Contact the FEMA Map Service Center at 1-800-356-9516 for information on evaluable products associated with this FIRM, Available products may include previously issued clietter of Map Change, a Flood Instruance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fix at 1-300-356-920 and its excited as the fixed map.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please col 1-877-FEMA MAP (1-877-338-2827) or visit the FEMA website at http://www.fems.gov.





SPECIAL FLOOD MAZARD AREAS SUBJECT TO INJUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% arrays food (100-year food), see how a sit be lose food, is the flood that has a 1% chance of being experient or expected in any years year. The Spood Flood Mause New is the see safety in Georgia give let year about drawner flood. A very of Spood Flood Mause New is the see safety in Georgia give let 1% showed drawner flood. A very of Spood Flood Mause New is the major should have flood flood

ZONE A No Rasa Fond Stevestors determined.

Food depths of 1 to 3 feet (usually areas of panding); Sale Food 200F 40 Food depths of 1 to 3 feet (usually sheet flow on sloping termin); average depths determined. For evers of afairlid fair flooding, velocities also

ocaumina.

Special Floors Hazard Area formerly protected from the 194 around chance food by a flood curriol system that has subsequently described. Zone AR indicate that the former flood control system is being restured to provide protection from the 1% around foreign engaged.

Constal food zone with velocity hazerd (wave extinn); no Ease Frond Develops nationalized County food zone with voicely hazard (wave action); Size Food Deutsions determined.

FLOODWAY AREAS IN ZONE AE

is the channel of a stream plus any adjacent floodystin press that must be kept free sent so that the 1% annual chance flood can be carried without substancial frontises.

ZONE X OTHER AREAS

Areas determined to be outside the 0.2% princel charge floodplain. Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CORS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

-----Floorings bounders Zone O boundary

CBRS and OFA boundary Boundary dividing Special Flood Hazard Area zones and boundary dividing Special Flood Hazard Areas of different base Flood Devations, flood depths or flood velocities.

---- 513 ---- Base Flood Devetion line and value; elevation in feet CEL EST

Referenced to the No.

**--**⊗ Cross section line <u>----</u> Transact Inc.

Geographic coordinates referenced to the North American Datum of 1923 (NAO 83), Western Hernisphore 87\*07'45", 32\*22'30" 1600-meter Universal Transverse Menastar grid values, mine

5000-foot grid ticks: Ploride State Plane tear-drafte system, West zone (PIPSZONE 0901), Transverse Mension projection Bench mark (see exploration in Notes to Uses section of this FIRM panel) DX5510 v

MAP REPOSITORY
Refer to listing of Map Reportation on Map Index EFFECTIVE DATE OF COUNTYMOR FLOOD INSURANCE RATE MAP August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map reviden history prior to countywide mapping, refer to the Community Pap History table located in the Flood Provence Study report for this landscale. To determine if flood insurance is available in this community, contact your insurance specific collect Project English Project Property is \$400,610,650.

MAP SCALE 1" = 500" 255 Q 500 1000 Cr. 1st 3 FECT

**FIRM** 

PANEL 0283F

FLOOD INSURANCE RATE MAP

LEE COUNTY,

AND INCORPORATED AREAS PANEL 283 OF 685

(SEE MAP INDEX FOR FIRM PANEL LAYOUT) CONTAINS:

COMMUNITY NUMBER PANEL SUFFOS

Notice to User. The Map thimber shown below shouts be used when placing map expert; the Gommunity humber thown above should be used on insurance applications for the



MAP NUMBER 12071C0283F

EFFECTIVE DATE AUGUST 28, 2008

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, perfoularly from local drainage sources of small size. The community may repository should be consulted for possible updated or additional flood hazard information.

consume to possible epitated or additional flood hazard information.

To chain more detailed information in oreas where Base Flood Elevations (BEEs) entire flood regions have been determined, users are encouraged to consist to Flood Flood regions have been determined, users are encouraged to consist takes centained within the Flood Plood (Floo) report that secompanies takes centained within the Flood Plood (Floo) report that secompanies from the FIRM present recorded whole-floot elevations. These BEEs as shown on the FIRM represent reting purposes only and shood not be used as the order proceed of flood clevation information. Accordingly, Bood clevation data presented in the Flood Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 00' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be area that coastal flood cevations are also provided in the Summary of Stavietic Elevations state in the Flood insurance Study report for this jurisdiction. Elevations shown in the Summary of Stavietic Elevations state should be used for constitution and/of Rodoplain imanagement purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the Roodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraufic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other perfilent floodway data are provided in the Flood Insurance Study peof for this juesticities.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this information.

The projection used in the proparation of this map was Florida State Plane was zone (FIRSZONE 502). The horizontal datum was NAD 83, GRS69 spheroid, Offerences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent prospections may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accourage of the FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground structures and server of the structure and ground structures of the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1928 and the North American Vertical Datum of 1988, visit the National Geodetic Survey with bits at Intel® 1988, visit the National Geodetic Survey at 9th reliabeling address:

NGS Information Services NGAA, NRYGS12 National Geodetic Survey SSIMC-3, 4820 1315 East-West Highway Swer Spring, Maryland 20810-3262 (301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on his map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <a href="https://doi.org/10.1007/journals.ngaz.gog/">https://doi.org/10.1007/journals.ngaz.gog/</a>

Base may information shown on this FIRM was provided in digital format by the lee County GIS Department. The tool controlline information was constructed based on orthopholography produced at a seek of "1" 10" (from sorbal imagery flown in 1998 and updated using orthopholography produced 2002 and 2005. The surface waster features were also constructed has do enthopholography produced at a scale of 1"=100" from sorbal imagery Econ in 1998.

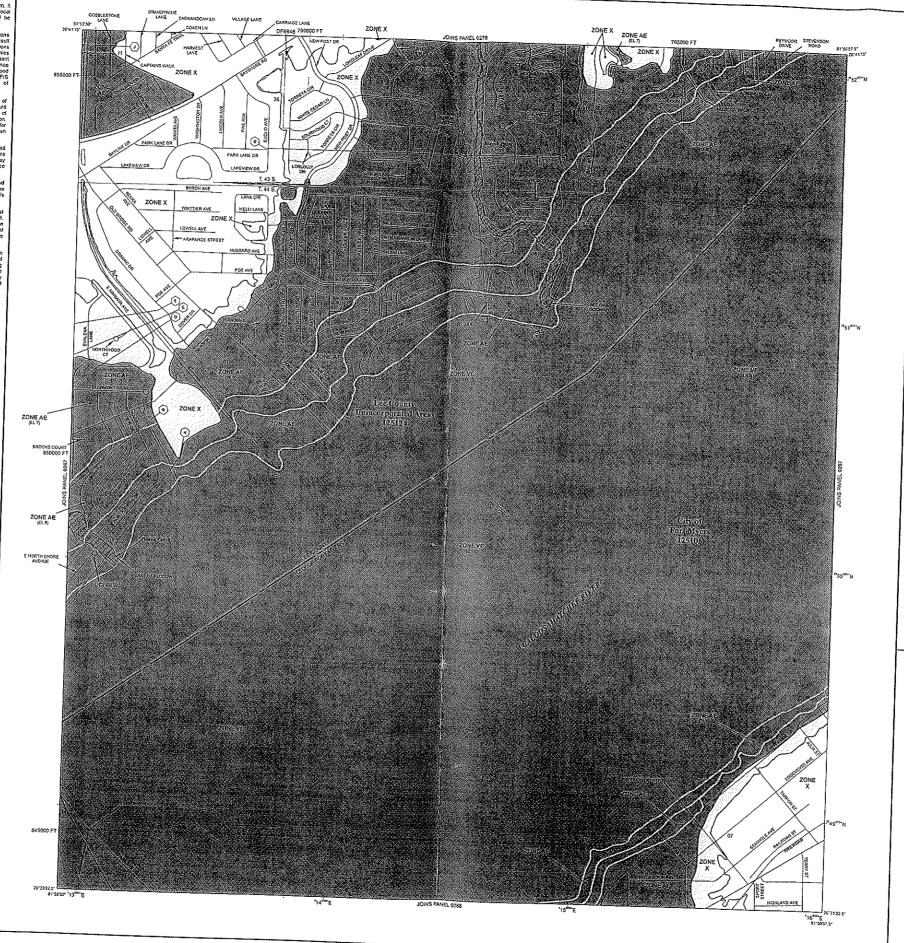
This map reflects more detailed and up-to-Sale stream channel configurations than those shown on the product FIRM for this jurisdiction. The floodpains and floodways that were transferred from the precours FIRM may have been adjusted to confirm to those new stream channel configurations. As a result, the Flood Product and Floodway Data stakes in the Flood insurance Stake Report (which configurations are producted and Floodway Data stakes in the Flood insurance Stake Report (which did not shown that is shown on this map.

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Contact the FEMA Map Service Center at 1-800-358-9516 for information on available products associated with this FIRM, Available products may include publicably issued fathers of Map Chango, a Flood insurance Study report, and/or services of the map. The FEMA Map Service Center may stoo be reached by Fax at 1-800-358-9620 and its workshad at https://www.msc.fcma.service.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please cat 1-577-FEMA MAP (1-577-336-2527) or visit the FEMA website at <a href="https://www.fema.gov">https://www.fema.gov</a>.



### LEGEND

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

The 1% around food (100-year food), also brown as the base food, is the food that has a 1% charge of body appeals or conceded in any given year. The Scooler Food Round has a the sale subset schooling by the 1% amount distant food, have all Spoid food Round Has a the sale sale food of the 1% amount distant food, have all Spoid food Hasel distant Jordan A. R.F. Alf. AD, RR. ASS, V. and 15. The fittle Food Benzon is the water-surface distantion of the 1% around charge food.

ZONE A IC lets from Persons seremines

700% CE

ZONE AN Flood depths of 1 to 3 feet (vousity areas of ponding); Sase Flood

Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); overage depths determined. For errors of alterial fan Rooding, velocities also determined. ZOVÆ AR

ZONEASS Are to be protected from 1% annual chance flood by a federal flood protection system under construction; no Base Flood Electrons

ZONEV County food zone with velocity hearts (wave action); no Base Flood Boystions determined.

ZONEVE FLOODWAY AREAS IN ZONE AS

The Foodway is the channel of a stream plus any adjacent Roodytun areas that must be been free of extraorment so that the 1% armual chance food can be corried without substantial increases in flood loggests.

OTHER FLOOD AREAS ZONEX

Areas of 0.2% around charce food; areas of 1% around charce food with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas projected by lones from 1% around charce food.

OTHER AREAS ZONE D

Areas determined to be outside the 0.2% around chance foodplain. Areas in which flood hazards are undecembed, but possible

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS OTHERWISE PROTECTED AREAS (OPAs)

\_\_\_\_ Zone O boundary

~~~ 513~~~

>76<sup>20</sup>N

CRPS and OPA bounds

Boundary dividing Special Flood Hazerd Area zones and boundary dividing Special Flood Hazerd Areas of offerent Base Flood Eterations, Flood capitis or flood visioning. Base Food Elevation line and value; elevation in feet

Base Flood Develors value where uniform within zone; elevation in feet? (EL 937) Cross section Line

®----Transest the 87\*07'45", 32\*22'30"

Grographic coordinates referenced to the North American Docum of 1983 (NAO E3), Western Hemisphore 1000-meter Universal Transverse Mercator and values, more

600000 FT 5000-foot grid ticks: Portice State Plane coordinate system, Work zone (FIPSZONE 0902), Transverse Mercetor projection DX5510 × Bonch mark (see explanation in Notes to Users section of this FRM panel)

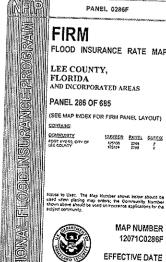
**♦**M1.5

MAP REPOSITIONY
Refer to Escing of Kiep Repositions on Map Index. EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP August 28, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

for reminusity map revision indices pater to countywide mapping, refer to the Community Map History stable lixested in the Flood Insurance Souty report for this jurisdiction. To determine it flood insurance is available to this community, contact your Insurance agont or call the Hatenat Pood Insurance Program at 1-000-038-6520.

MAP SCALE 1" a 500" 250 0 500 1000 C) T14 7 FEFT 150 0 152 W



FLOOD INSURANCE RATE MAP

AND INCORPORATED AREAS

Notice to User. The Map Number shows below shows to used when placing map orders; the Community Number shows above should be used on insurance explications for the



12071C0286F EFFECTIVE DATE AUGUST 28, 2008

