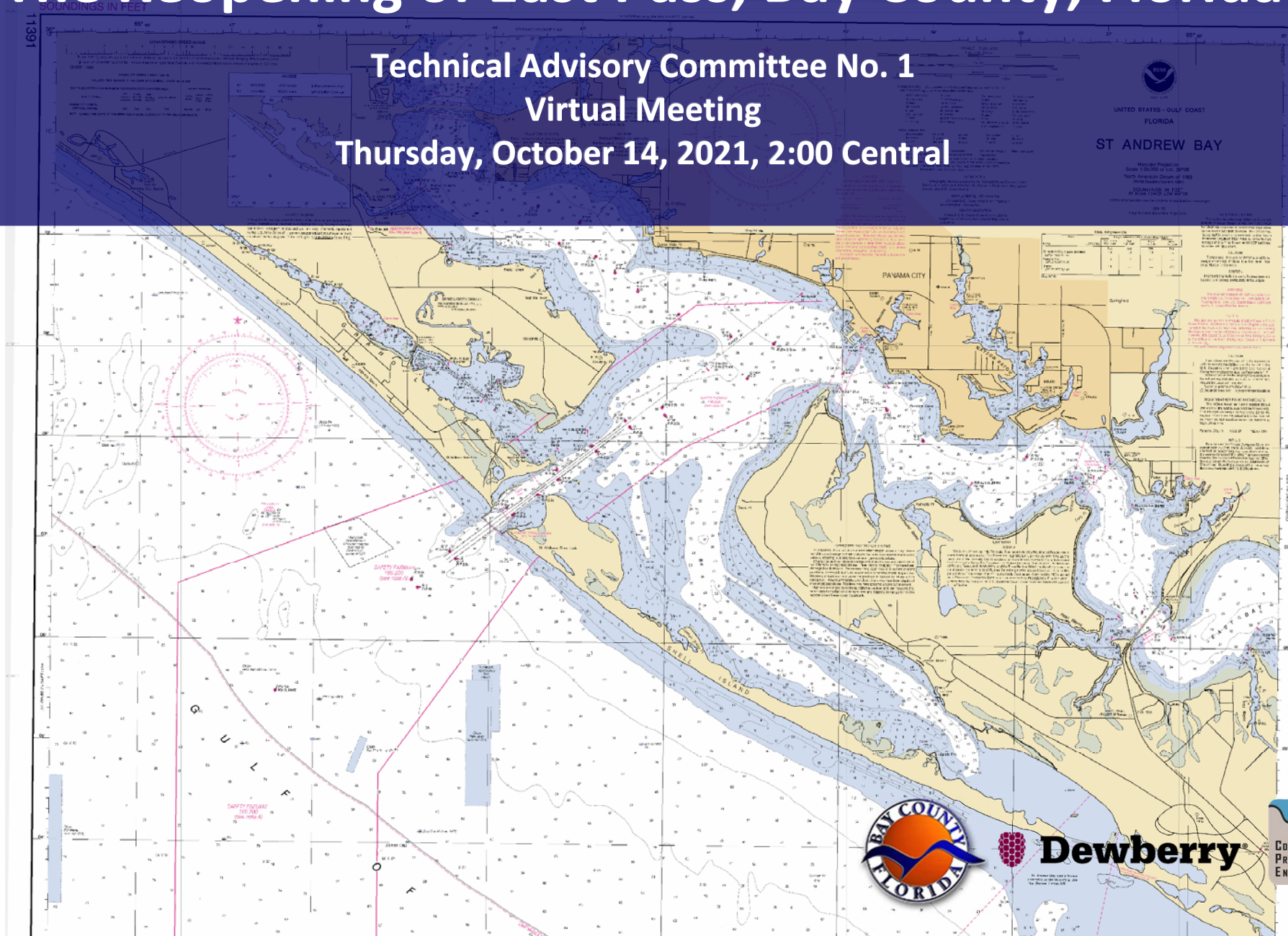
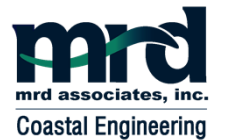


# The Reopening of East Pass, Bay County, Florida

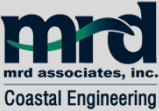
Technical Advisory Committee No. 1  
Virtual Meeting  
Thursday, October 14, 2021, 2:00 Central



**Dewberry**



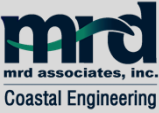
# Agenda



- **Introductions**
- **Project Overview**
- **Schedule**
- **Presentation**
  - Literature Review
  - Data Collection and Analysis
- **Future TAC Meetings**
  - Feasibility and Design Assessment
  - Model Set-up, Calibration and Validation
  - Alternative Analysis
- **Discussion**



# Introductions



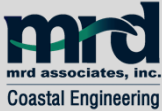
- **Bay County**
- **Tyndall Air Force Base**
- **Florida Department of Environmental Protection**
- **Florida Fish and Wildlife Conservation Commission**
- **U.S. Army Corps of Engineers**
- **U.S. Fish and Wildlife Service**
- **National Marine Fisheries Service**
- **Friends of Shell Island**

[md@mrd-associates.com](mailto:md@mrd-associates.com)

[kh@mrd-associates.com](mailto:kh@mrd-associates.com)



# Project Overview



It is the goal is to develop a **feasibility study, preliminary design and permitting for re-opening of the historic East Pass in St. Andrew Bay to a natural, non-armored channel.**

The project approach is to divide the scope of work into three phases to achieve the goals in an efficient and cost-effective manner:

## **Phase I - Feasibility and Design Study – Year 1**

Phase II.A - Permit Support Documentation, Applications and Processing – Year 2,3,4

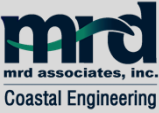
Phase II.B - Environmental Assessment/ Environmental Impact Statement (EA/EIS) – Year 2,3,4

The objectives below are the basis for the issuance of a State of Florida permit under Rule 62B-41.005 (11) and (12), Florida Administrative Code (FAC) and it is understood that the County desires to achieve these objectives:

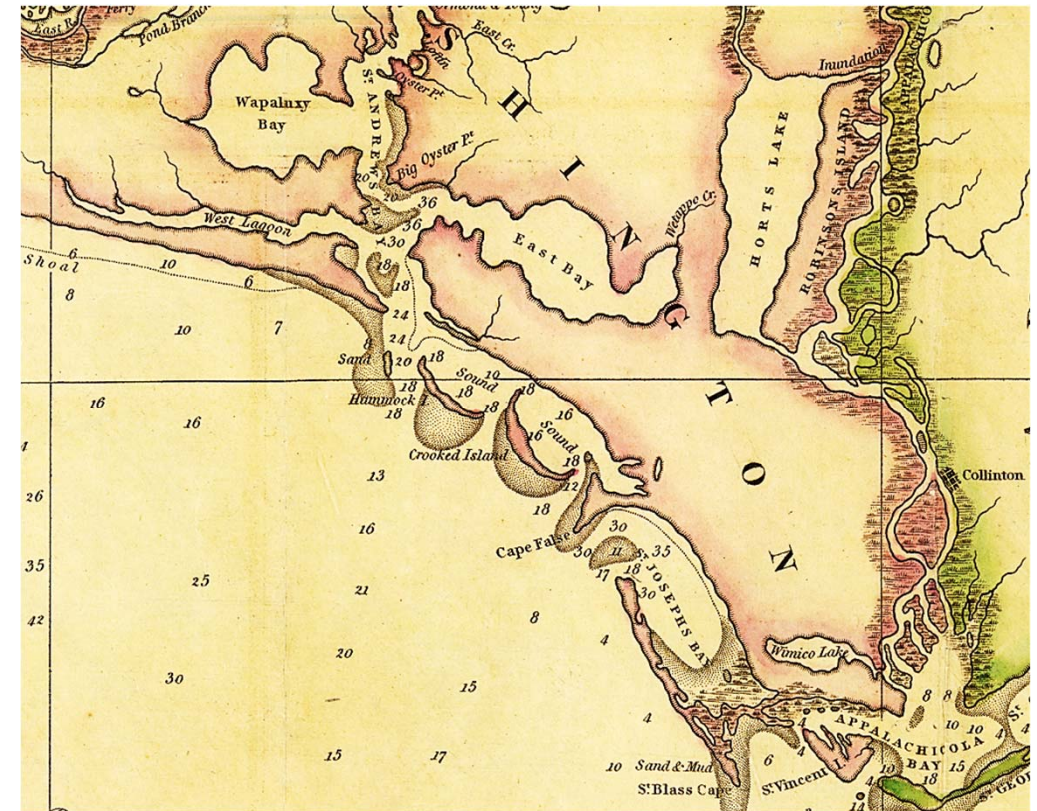
- a) The inlet will be hydraulically stable under normal conditions; and,***
- b) The inlet will balance the sediment budget such that beach restoration and nourishment of the adjacent beaches, or other forms of shoreline stabilization, including jetties, are not required.***
- c) Restore and enhance water quality within St. Andrew Bay.**
- d) Not result in significant adverse impacts to endangered species.**
- e) Provide a Public Benefit(s).**
- f) Not have an adverse impact on the existing St. Andrew Bay Entrance Channel.**
- g) Qualify for the necessary regulatory permits from the Florida Department of Environmental Protection and the U.S. Army Corps of Engineers.**



# Literature Review

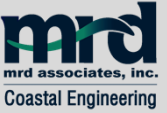


- Morphology
  - 1700's to 1900's
- 2001 Project
- Hydraulics and Stability
- Hydrodynamic-Chemical Fate
- Sea Grass - Water Quality
- Historic Aerials
- Hurricane Events
- Survey Data
- Water Quality Data

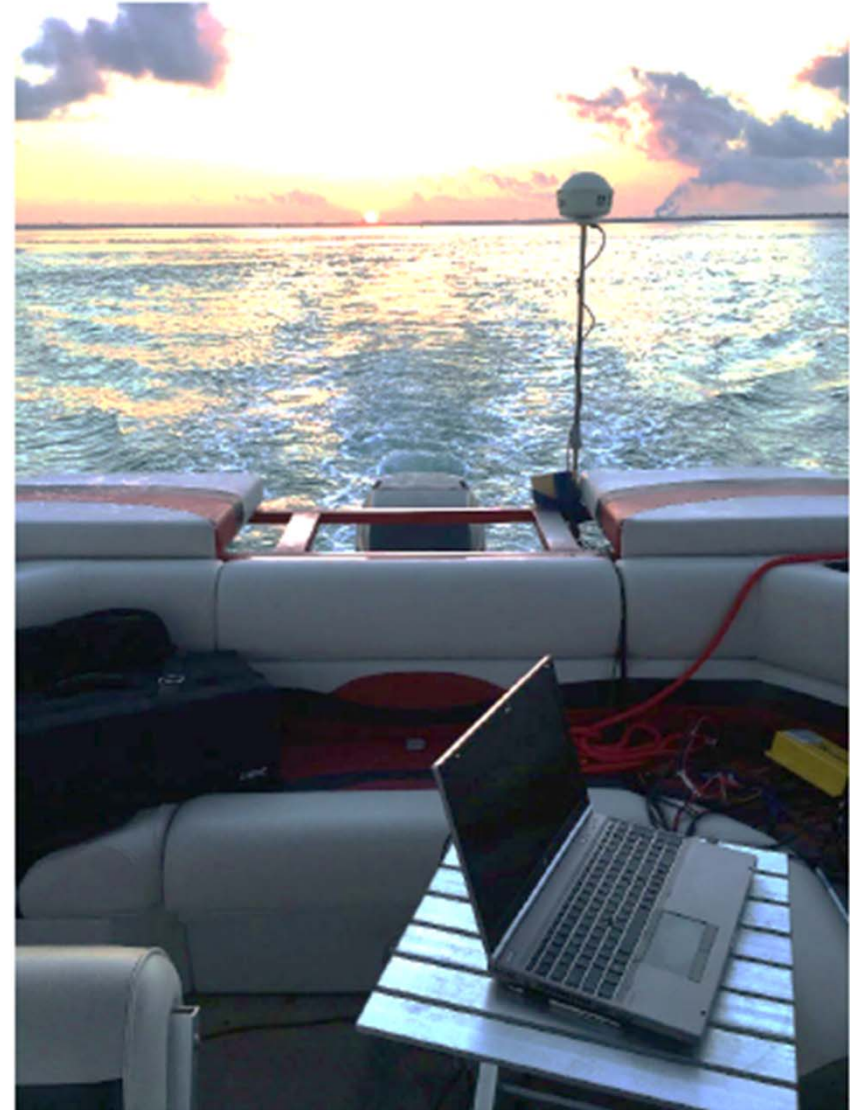


Williams, 1827

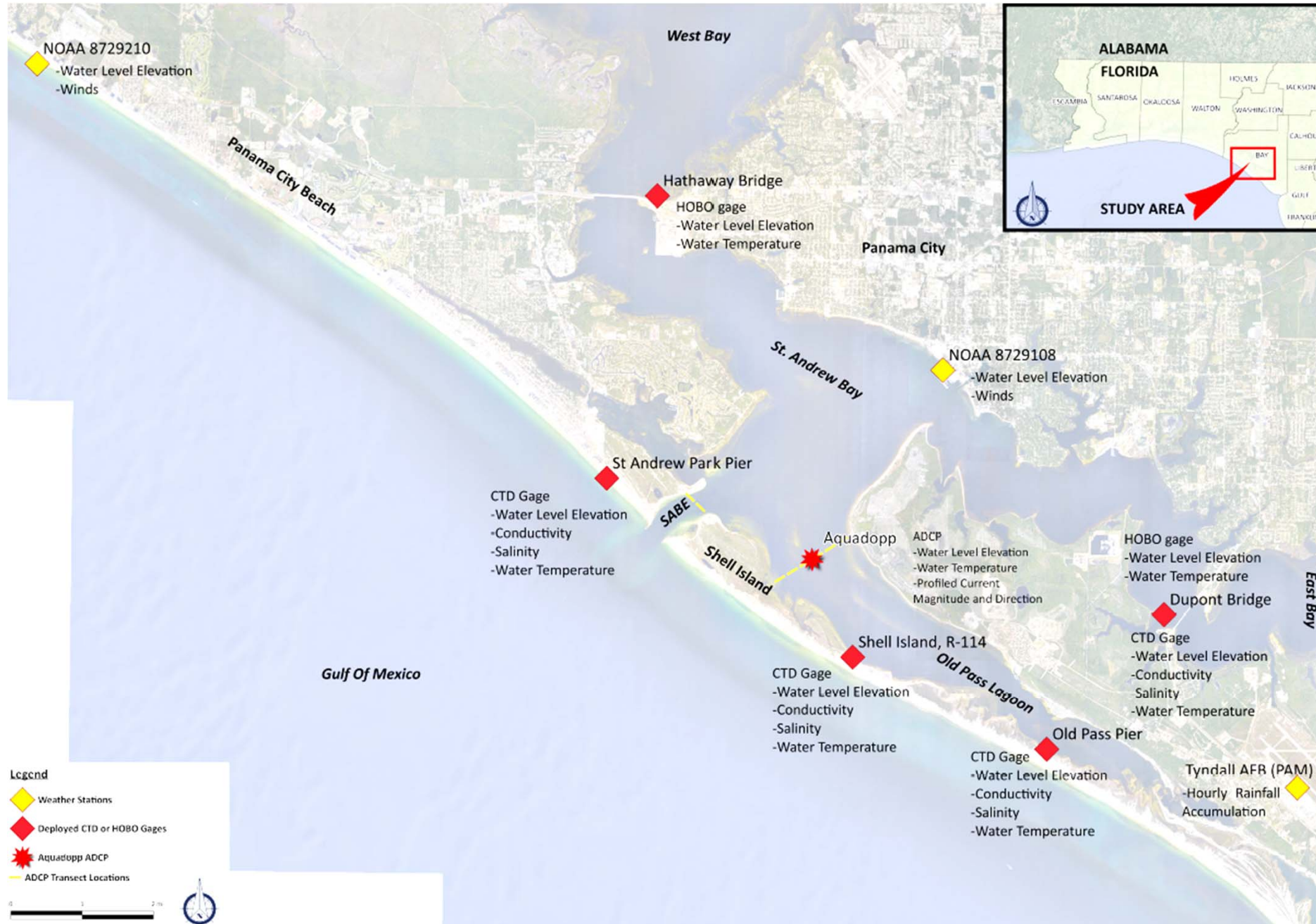
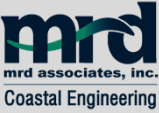
# Data Collection and Analysis



- Existing Data Collection Efforts
  - NOAA Tides and Weather
  - METARS
  - Rainfall
  - Wave Data
- Tide and Salinity Measurements
- Bottom Mounted ADCP Deployment
- Moving Vessel ADCP Measurements

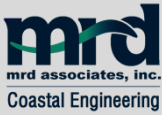


# Data Collection Stations





# Tidal and Salinity Measurements



- **Deployment Duration**
  - April 27 to June 11, 2021
  - 30-45 days
- **Four CTD Gages**
- **One Dedicated Tide Gage**
- **ADCP Water Level**



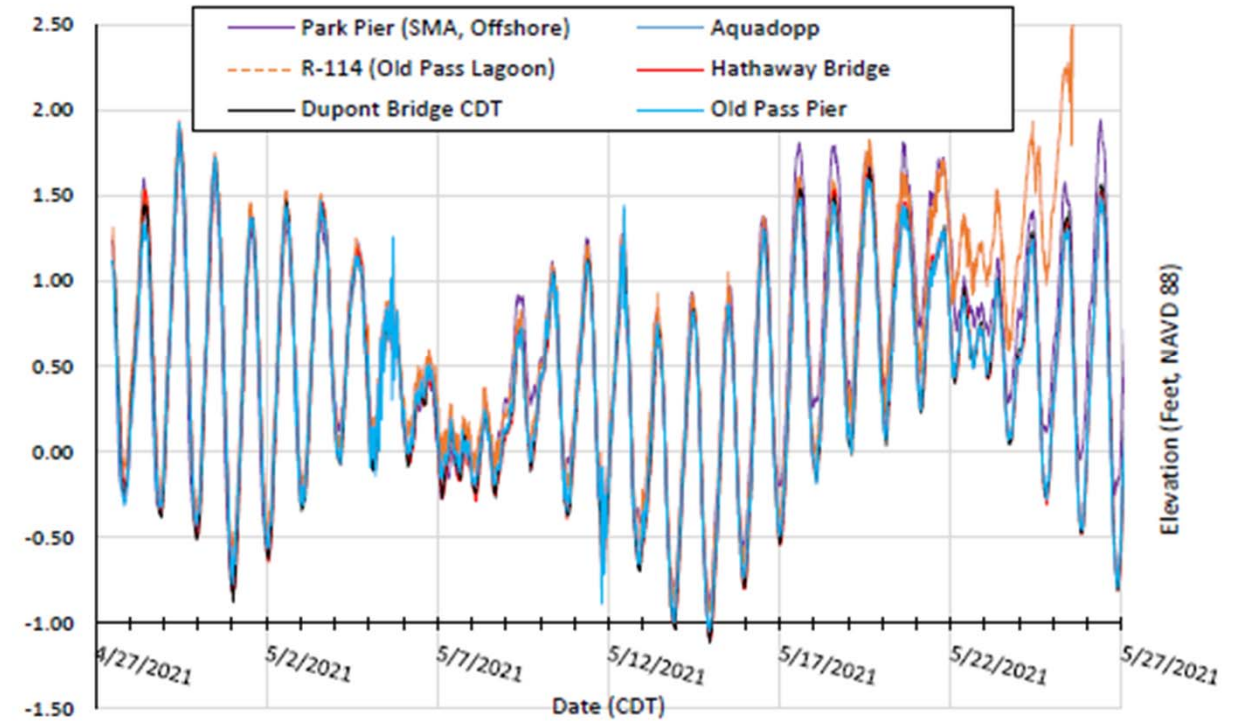
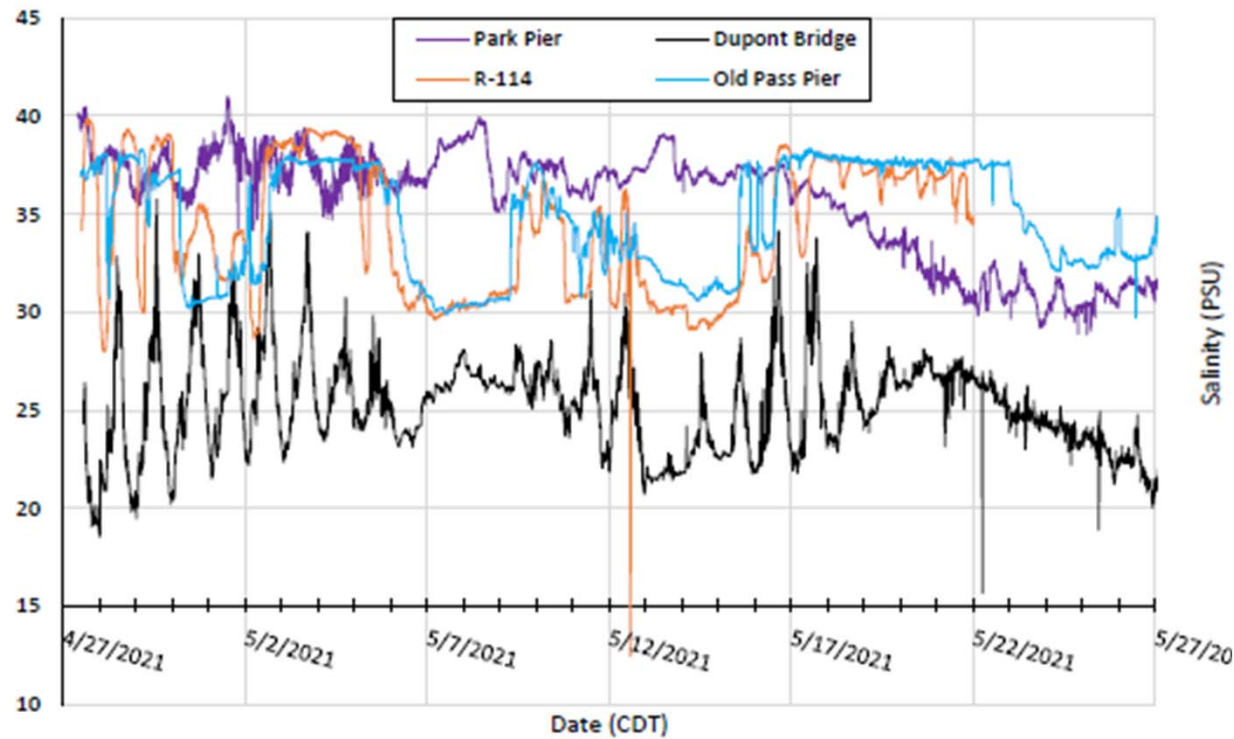
Old Pass Pier



Dupont Bridge



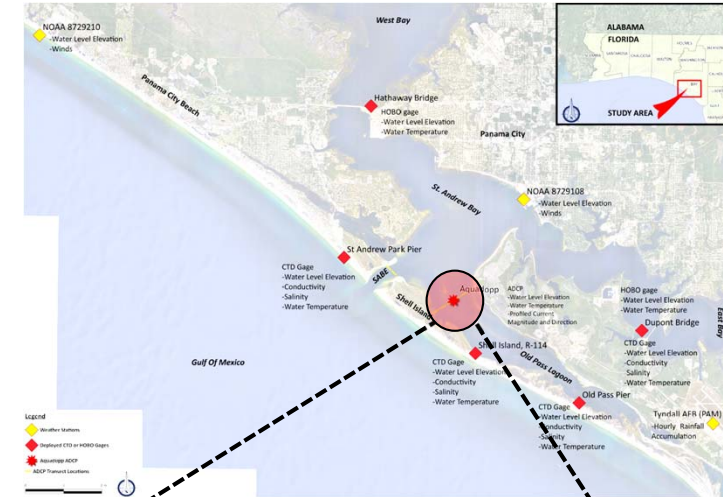
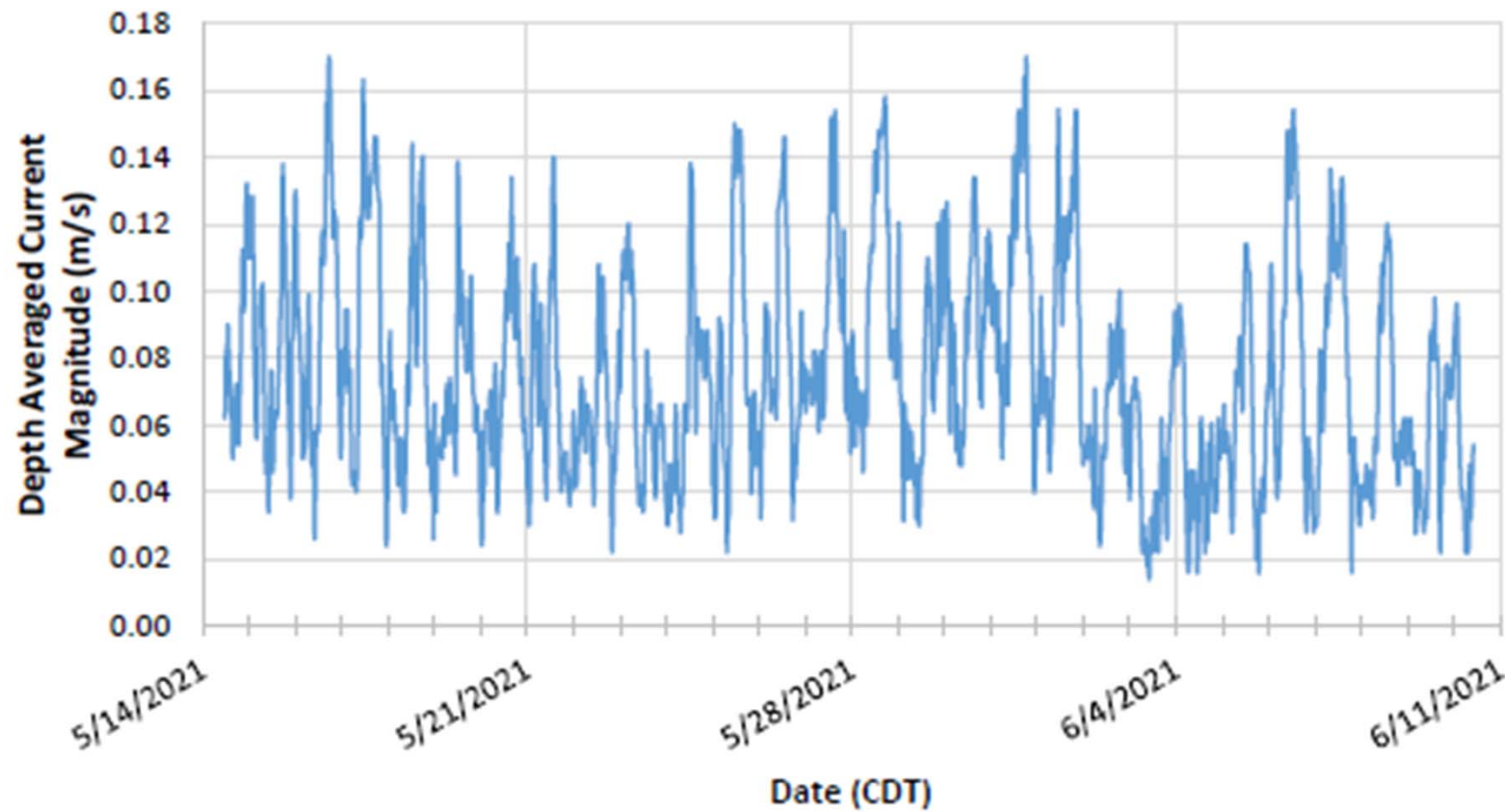
St. Andrews State Park Pier



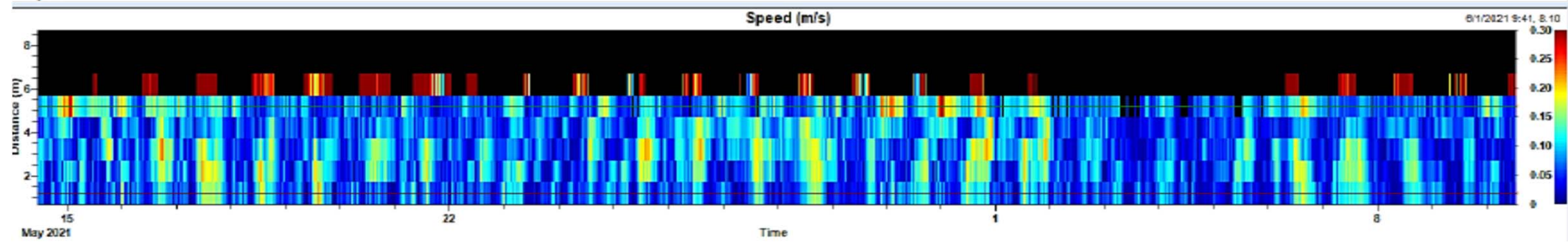
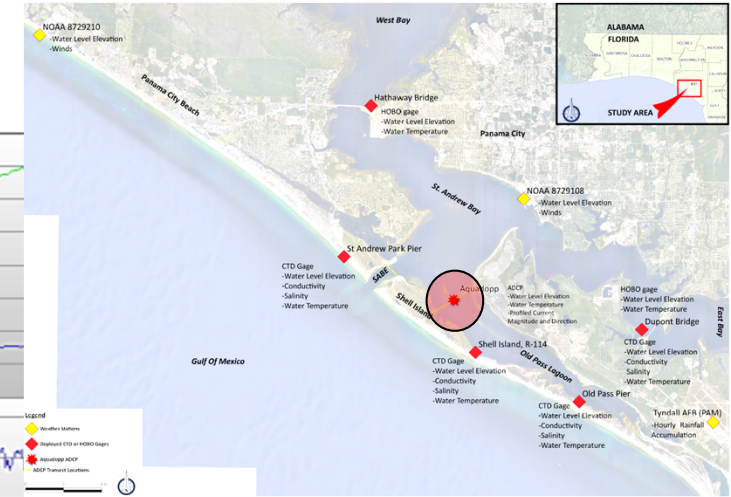
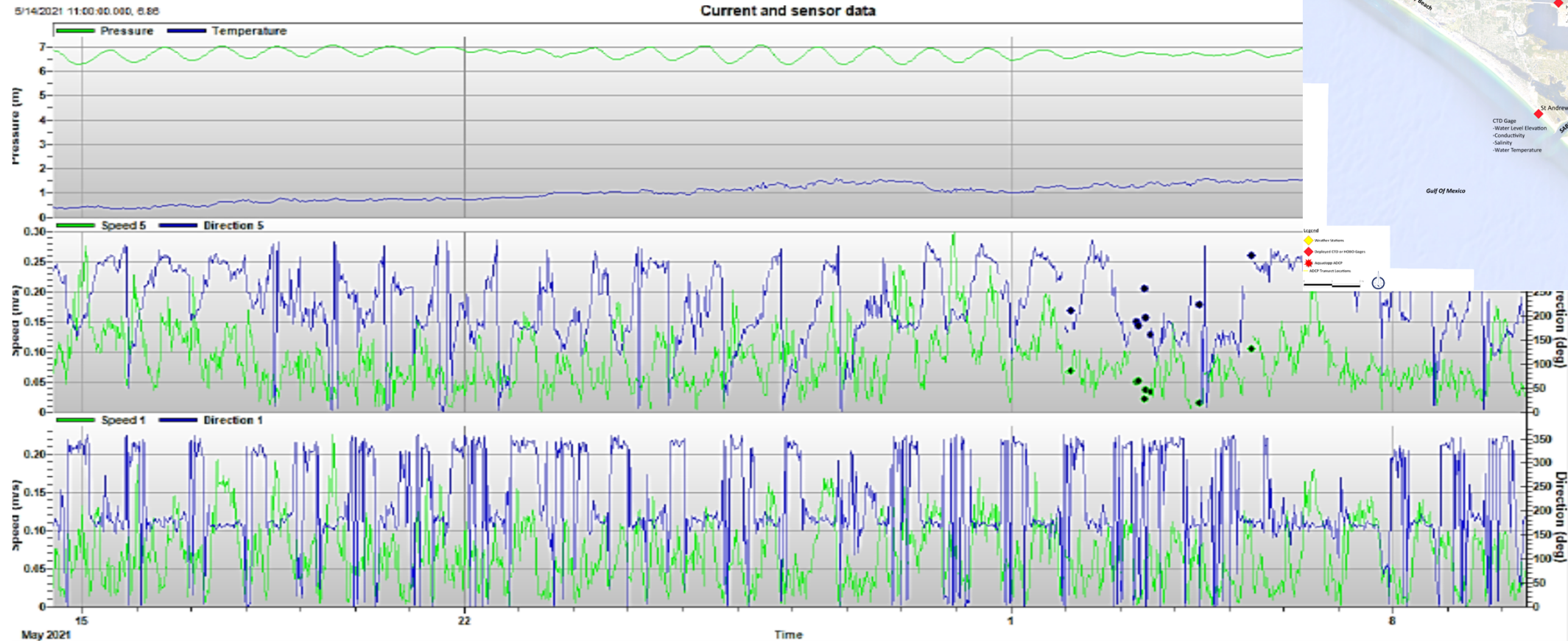
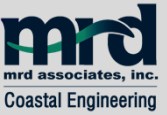
# Old Pass Lagoon ADCP Measurements



- Nortek Aquadopp Profiler ADCP
  - Water Level
  - Water Temperature
  - Profiled Current Magnitude and Direction
- Average Velocity Measured, < 0.1 m/s (0.5 knot)

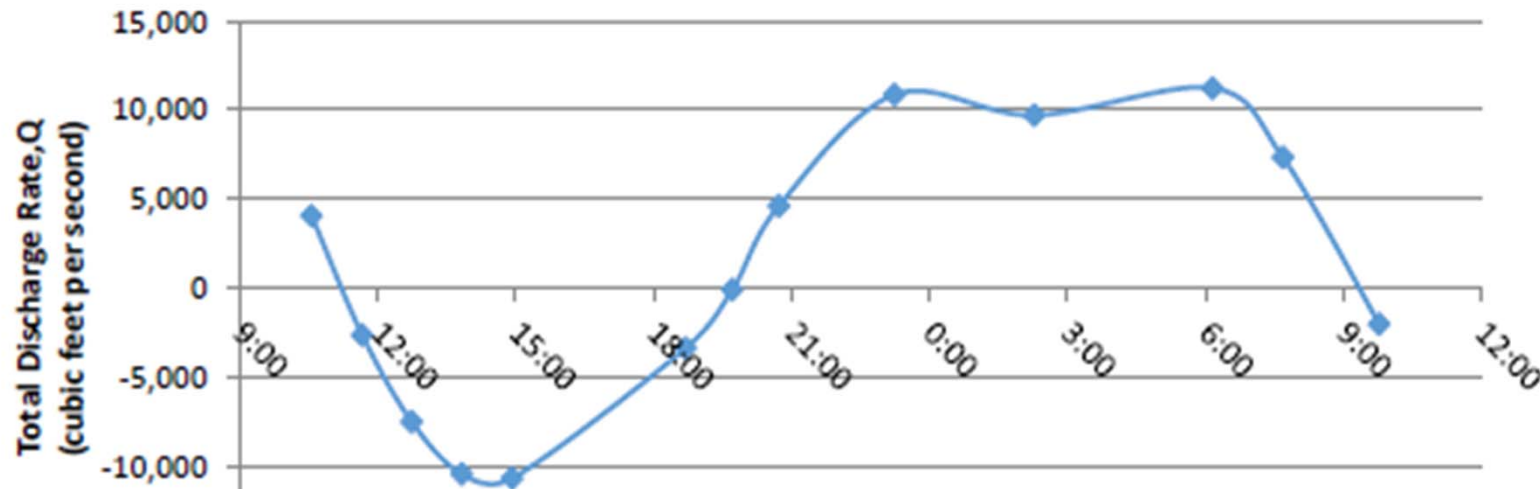
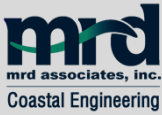


# Old Pass Lagoon ADCP Measurements

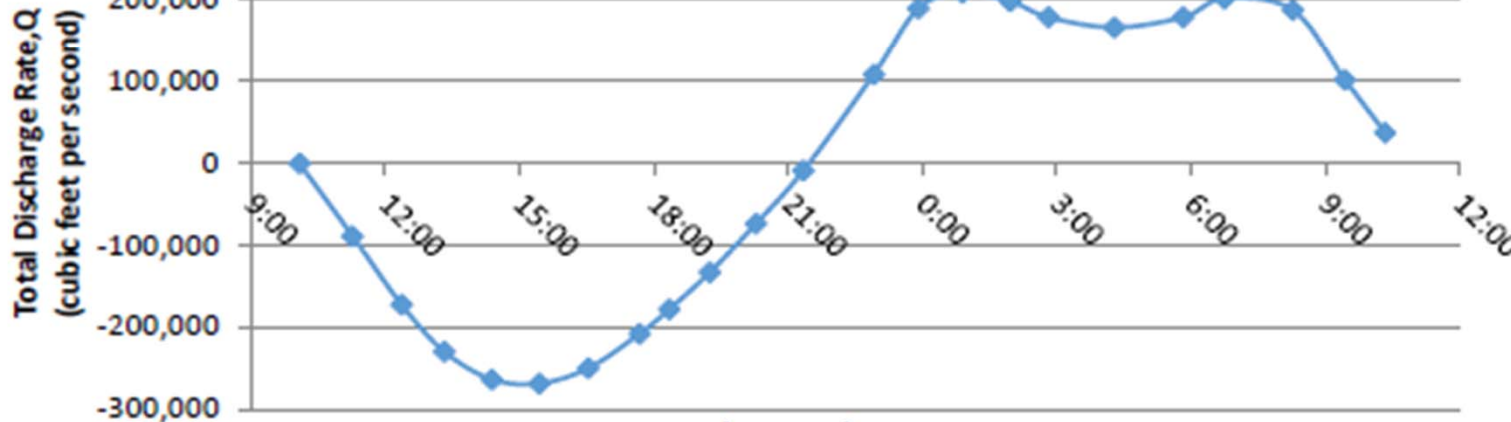




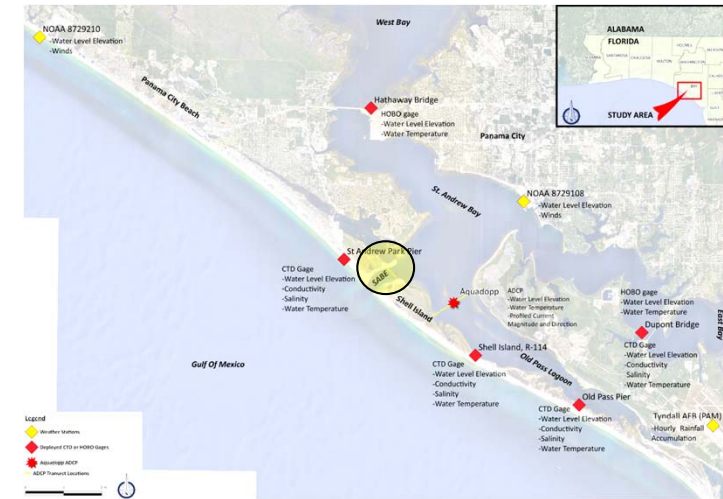
# SABE Discharge Measurements



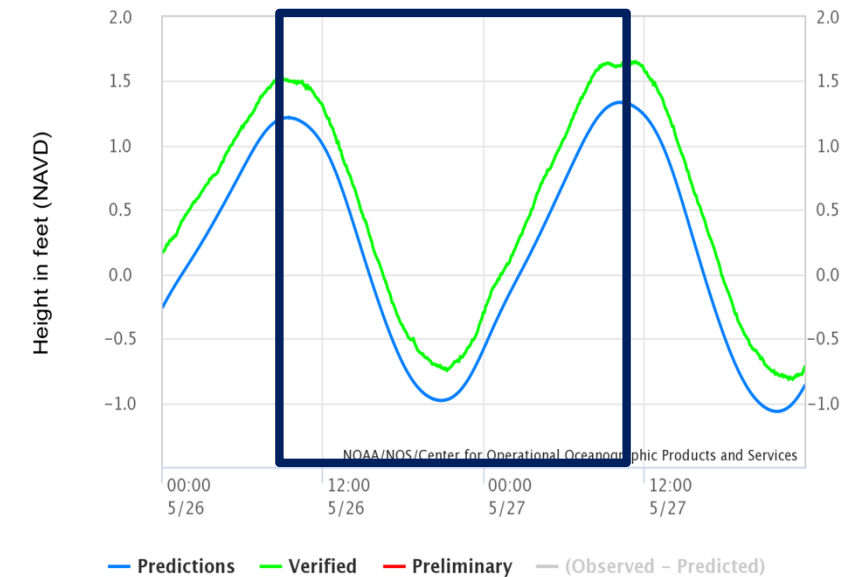
Tide Stage	Old Pass Lagoon		SABE	
	Volume (cubic feet)	Percentage	Volume (cubic feet)	Percentage
Ebb	-198 x 10 <sup>6</sup>	32%	-6,839 x 10 <sup>6</sup>	48%
Flood	412 x 10 <sup>6</sup>	68%	7,281 x 10 <sup>6</sup>	52%



Time CDT (HH:MM), May 26 & 27, 2021

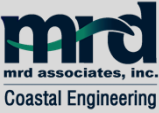


NOAA/NOS/CO-OPS  
Observed Water Levels at 8729108, Panama City FL  
From 2021/05/26 00:00 LST/LDT to 2021/05/27 23:59 LST/LDT



— Predictions — Verified — Preliminary — (Observed - Predicted)

# Agenda

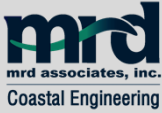


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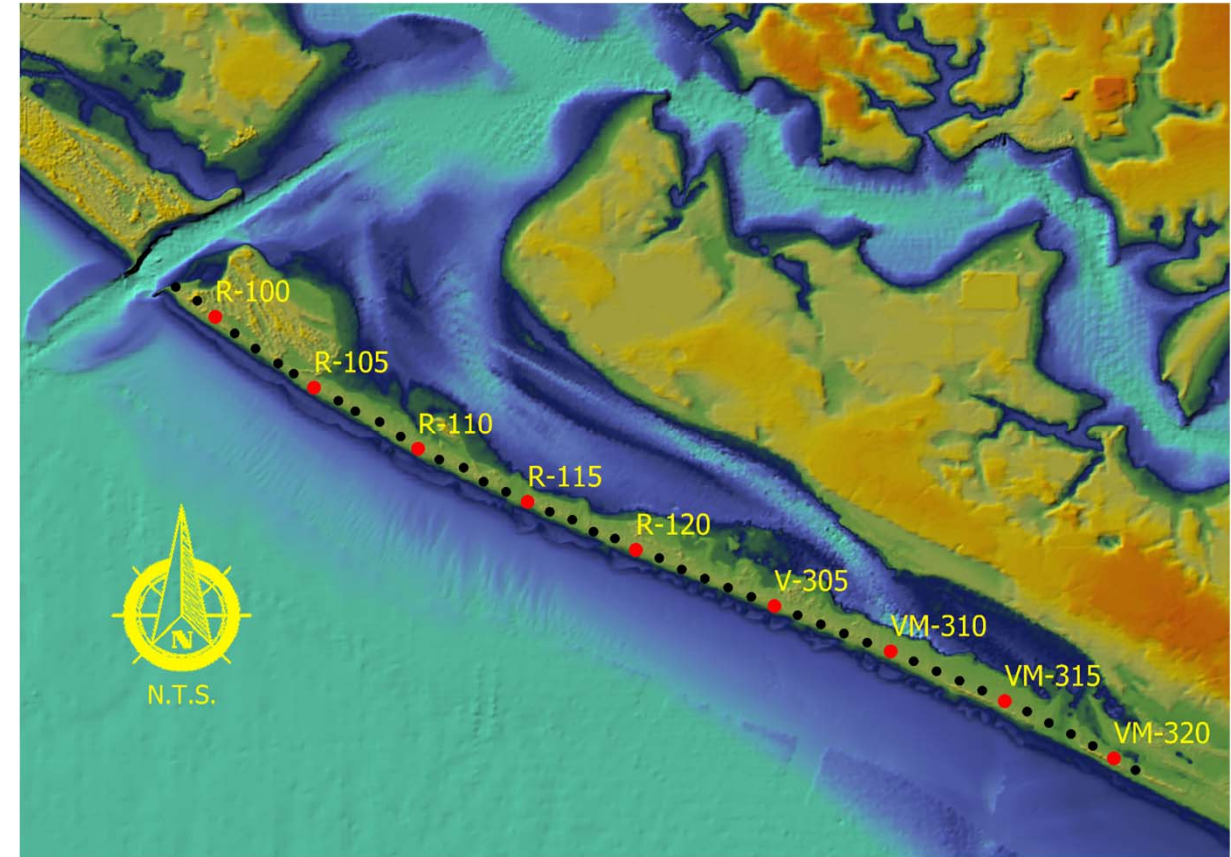


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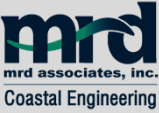
# Feasibility and Design Assessment



- Sediment Transport Modeling
- Shoreline Analysis
- Topography and Bathymetry
- Environmental Sensitive Areas
- Dual Inlet Modeling
- Effects on SABE
- Alternative Inlet Locations

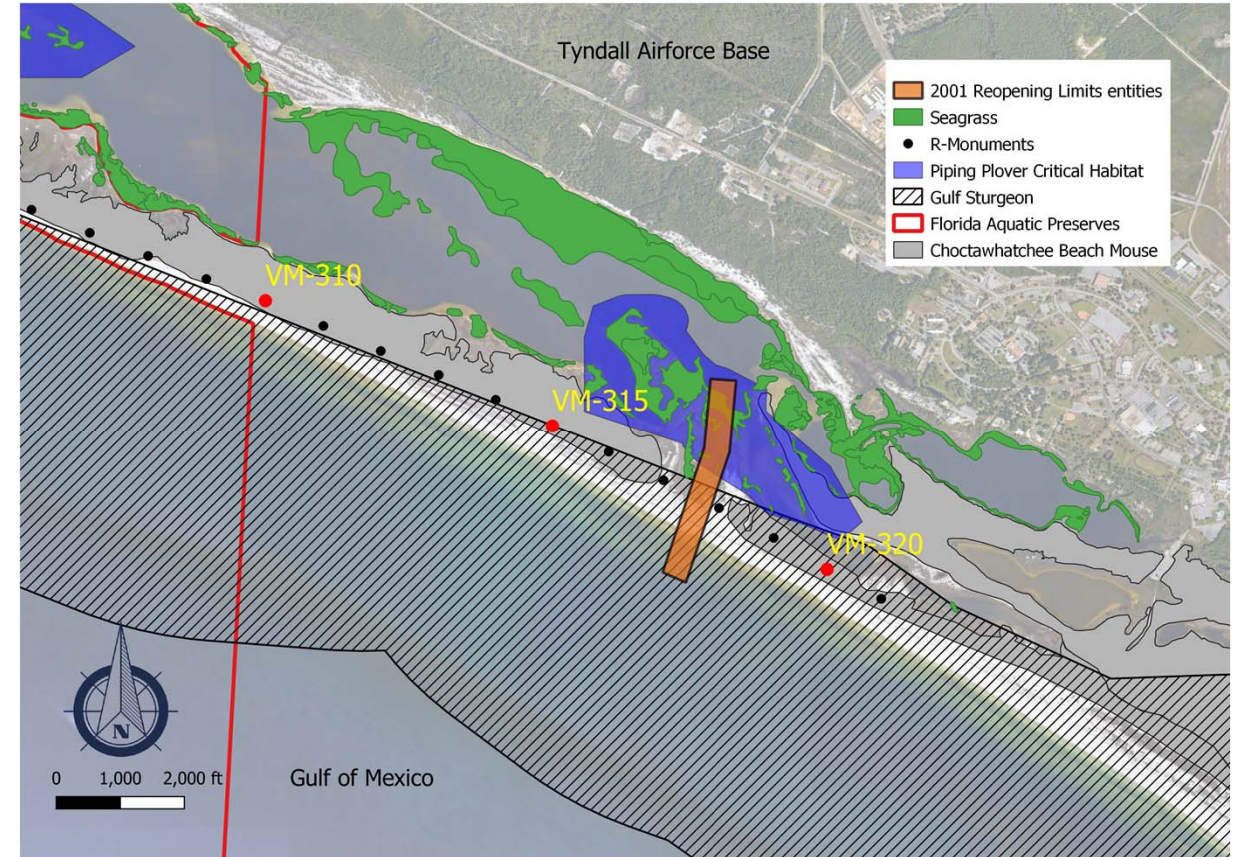
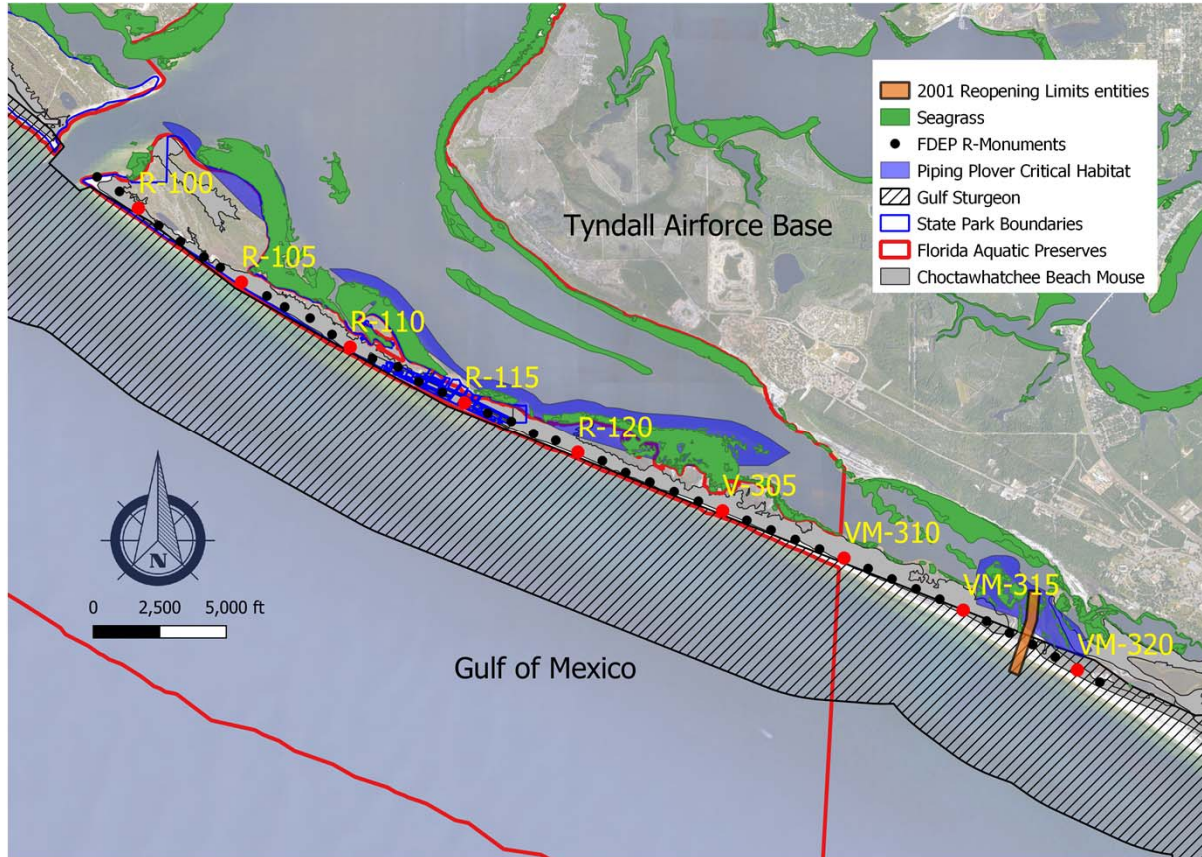
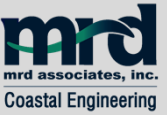


# Alternative Locations

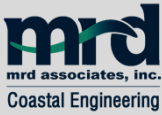




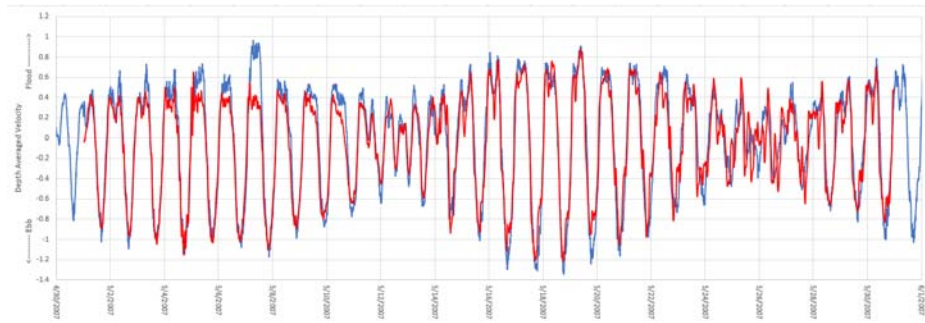
# Alternative Locations



# Numerical Modeling

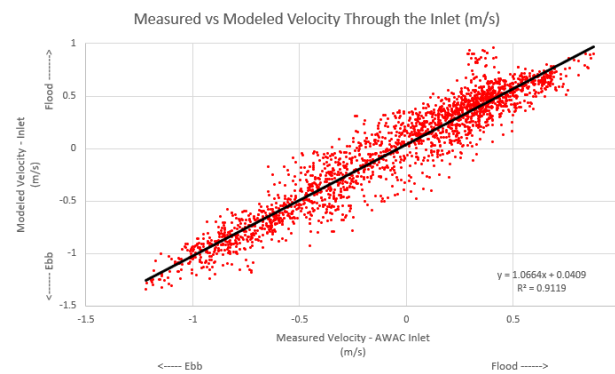


- Tidal Calibration



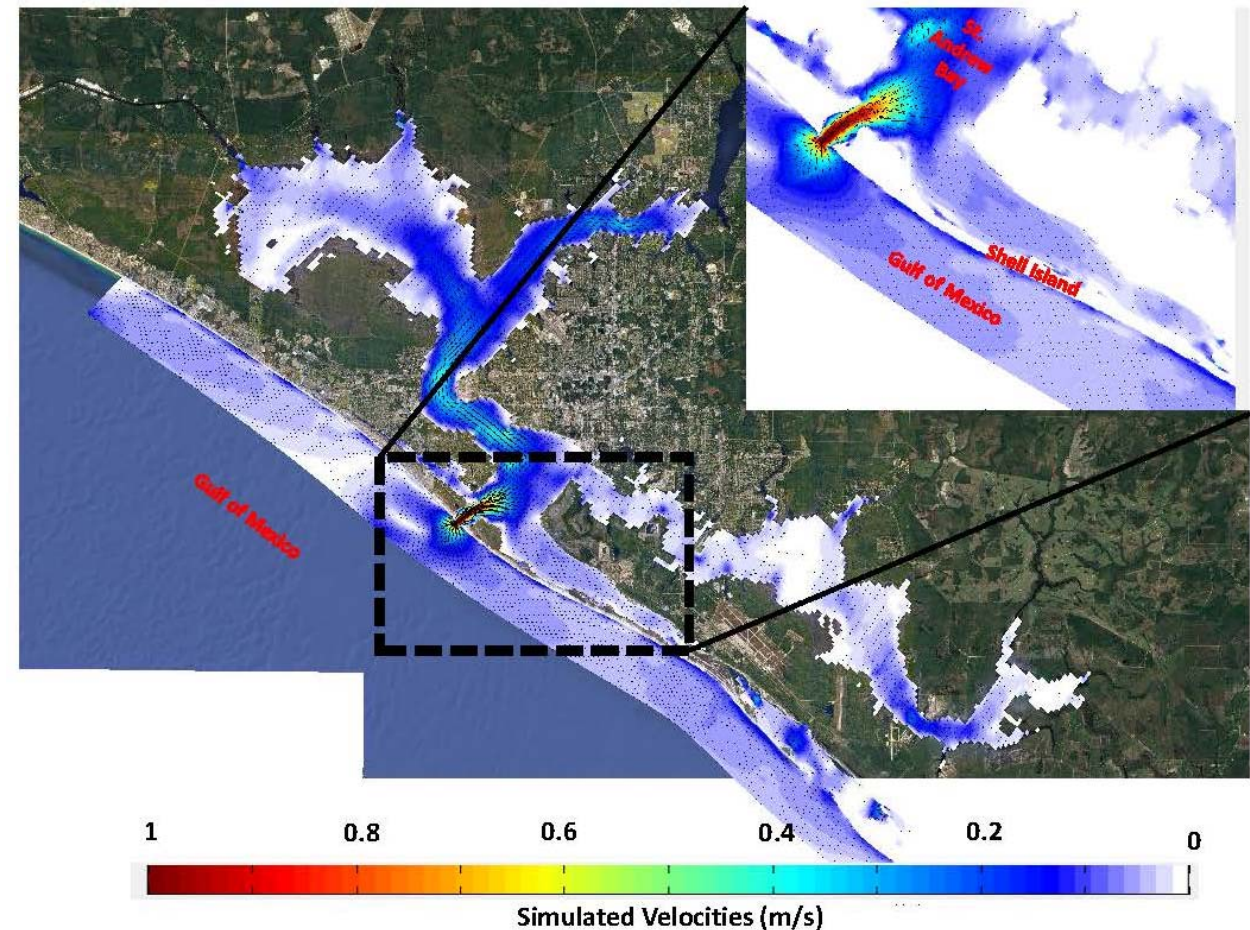
- Wave Calibration

- Flow Calibration

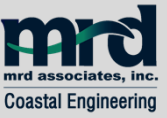


- Salinity Calibration

- Morphologic Evolution Calibration



# Discussion



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