



GULF COAST RESTORATION TRUST FUND



BAY COUNTY AND CITY OF PANAMA CITY BEACH CONTINUOUS OUTFALL SEDIMENT REDUCTION PROJECTS



PREPARED BY: THE CITY OF PANAMA CITY
BEACH AND BAY COUNTY PUBLIC WORKS

BAY PRP 2014-011



15 CONTINUOUS OUTFALL OVERVIEW



B-132 6X6 BOX CULVERT



B-130 30" CONCRETE PIPE





15 CONTINUOUS OUTFALL OVERVIEW



B-119 36" CONCRETE CULVERT



B-116 36" CONCRETE CULVERT





15 CONTINUOUS OUTFALL OVERVIEW



B-112 5X5 CONCRETE BOX CULVERT



B-106 60" CONCRETE CULVERT





15 CONTINUOUS OUTFALL OVERVIEW



B-97 36" CONCRETE CULVERT



B-88 30" CONCRETE CULVERT





15 CONTINUOUS OUTFALL OVERVIEW



B-78 30" CONCRETE CULVERT



B-71 30" CONCRETE CULVERT





15 CONTINUOUS OUTFALL OVERVIEW



B-55 4X10 CONCRETE BOX CULVERT



B-52 36" CONCRETE CULVERT





15 CONTINUOUS OUTFALL OVERVIEW



B-51 42" CONCRETE CULVERT



TYPICAL TRASH IN INLETS ON BEACH





15 CONTINUOUS OUTFALL OVERVIEW



TYPICAL OUTFALL SWEEP AREA ERODING BEACH AREAS





15 CONTINUOUS OUTFALL OVERVIEW

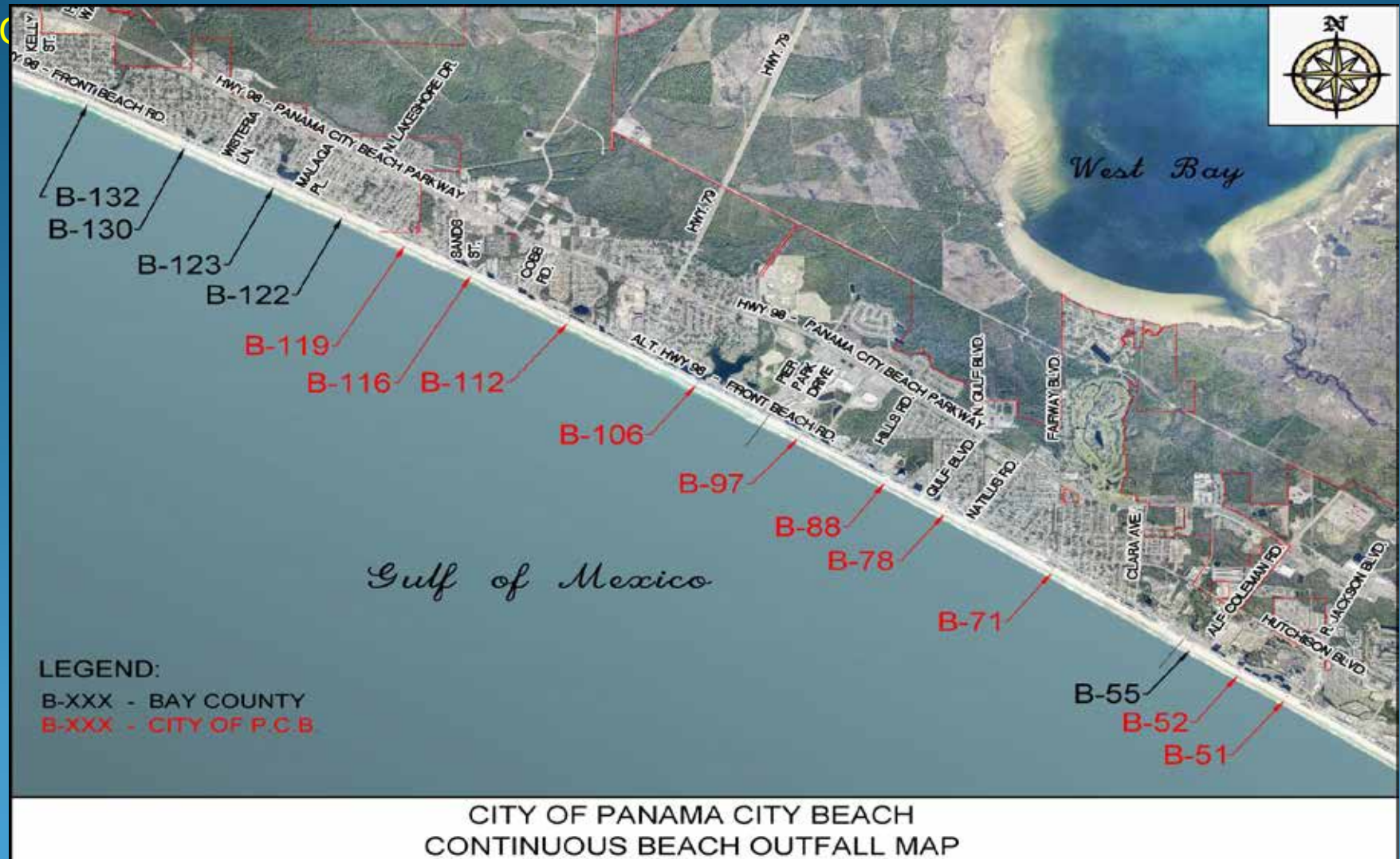


CALYPSO TOWERS OUTFALL SWEEP





15 CONTINUOUS OUTFALL OVERVIEW





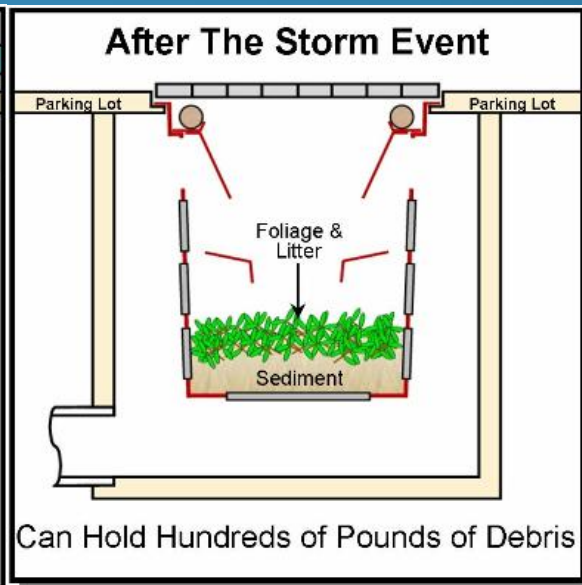
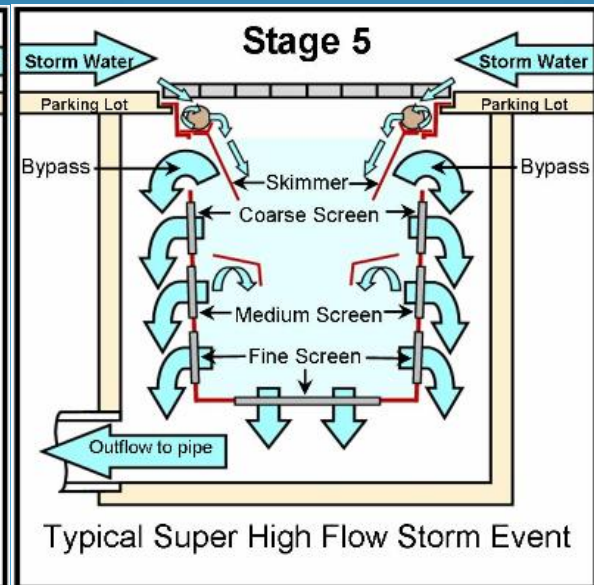
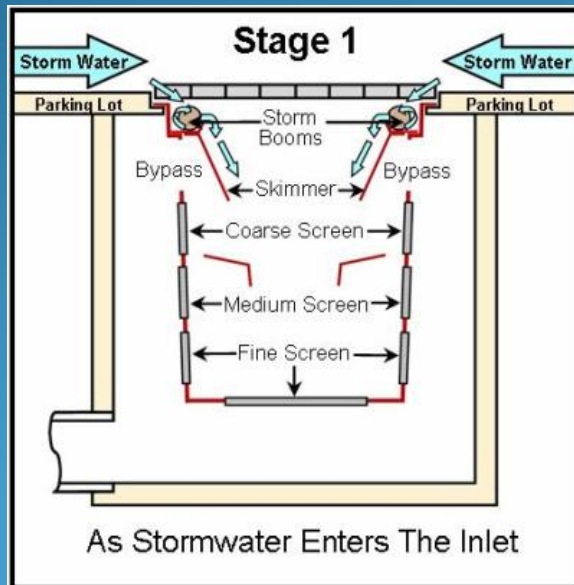
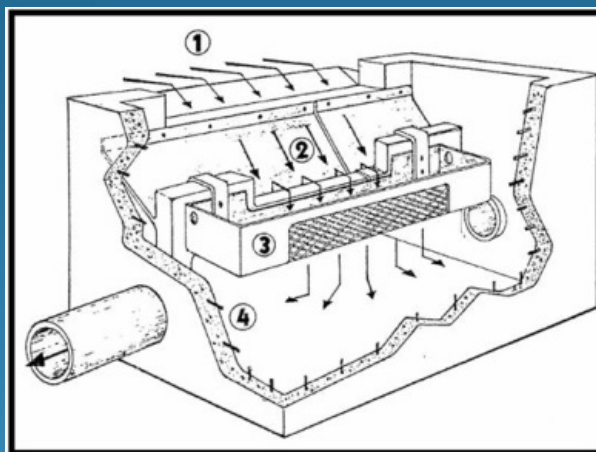
PHASE I PROJECT OBJECTIVES



- 1. FIVE BAY COUNTY CONTINUOUS OUTFALLS - DESIGN AND PERMIT**
 - A. EXTEND AND OR REPLACE OUTFALL CULVERTS**
 - B. DESIGN SCREENS AND BAFFLE BOXES FOR UPSTREAM TO IMPROVE WATER QUALITY AT BEACH DISCHARGE**
 - C. DESIGN IMPROVEMENTS BASED ON BEST STUDY RECOMMENDATIONS**
 - D. COORDINATE DESIGN WITH BAY COUNTY PUBLIC WORKS**
- 2. DESIGN AND PERMIT SEDIMENT AND NUTRIENT REDUCTION IMPROVEMENTS TO TEN CITY OF PANAMA CITY BEACH CONTINUOUS OUTFALLS IDENTIFIED IN APPLICATION**
- 3. CONSTRUCT SEDIMENT AND NUTRIENT REDUCTION IMPROVEMENTS WITH \$200,000 FUNDING AT HIGH PRIORITY OUTFALLS IDENTIFIED IN ST. ANDREWS BAY ENVIRONMENTAL STUDY TEAM (BEST) STUDY**

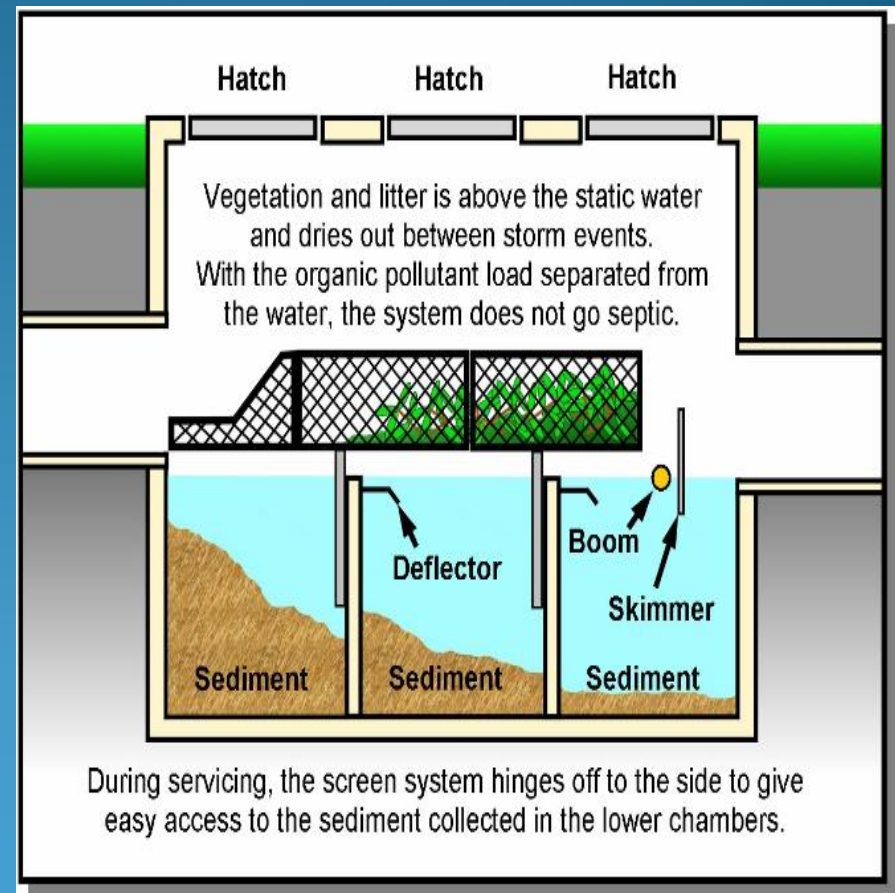
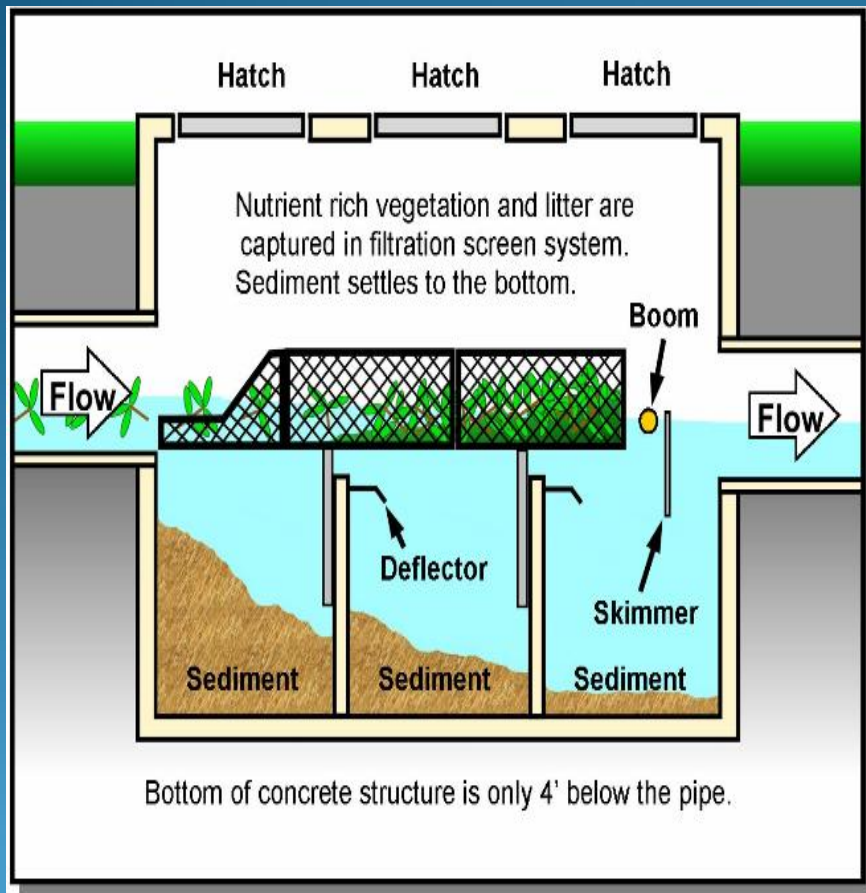


INLET AND PIPE SKIMMER BMP'S





BAFFLE BOX SYSTEM – REMOVES SEDIMENT, ORGANICS, AND OIL





PHASE II PILOT PROJECT **OBJECTIVE**



OFFSHORE DISCHARGE - SURVEY AND DESIGN DISCHARGE SYSTEM INTO GULF OF MEXICO ESTIMATED AT 1400 FEET OFFSHORE

A. PLANNING PHASE – CONNECTION FOR CALYPSO TOWERS AND LULLWATER LAKE OUTFALLS

B. DESIGN - NEW OUTFALL FOR LULLWATER LAKE ON WEST END OF PANAMA CITY BEACH PROPERTY

C. DATA COLLECTION – SURVEY, GEOTECHNICAL, BACKGROUND WATER QUALITY TESTING

D. ANALYSIS, DESIGN, AND CONSTRUCTION PLANS OFFSHORE DISCHARGE SYSTEM



LULLWATER & CALYPSO CONNECTION TO OFFSHORE DISCHARGE STRUCTURE



Source: <http://maps.baycountyfl.gov>

PHASE II PILOT PROJECT

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LULLWATER OUTFALL LOCATION



Source: <http://maps.baycountyfl.gov>



LULLWATER LAKE OUTFALL LOCATION

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PHASE II OFFSHORE DISCHARGE

SEDIMENT REMOVAL COMPONENTS

STAINLESS STEEL RADIAL SCREENING UNITS

NUTRIENT SEPARATING BAFFLE BOXES

CURB INLET SCREENS AND GRATES – ROADSIDE
LITTER COLLECTION

PIPE SKIMMERS – REMOVES FLOATING TRASH

MONITORING PLAN FOR LONG TERM DATA
COLLECTION FROM PROJECT



OUTFALL PIPE INSTALLATION



DIVER ALIGNMENT OF JOINTS



JOINT CONNECTION INSPECTION





OUTFALL PIPE INSTALLATION



FINAL PIPE PLACEMENT



PIPE SHIM ASSEMBLY





OUTFALL PIPE INSTALLATION



OUTFALL JUNCTION BOX



RADIAL SEDIMENT SCREENS





OFFSHORE PIPE INSTALLATION



OUTFALL JUNCTION BOX



TRESTLE CONSTRUCTION





RESTORE ACT MULTI-YEAR IMPLEMENTATION PLAN



ENVIRONMENTAL GOALS

OBJECTIVE 2.1 – IMPROVE ST. ANDREWS BAY WATERSHED WATER QUALITY

**OBJECTIVE 2.4 – INCREASE AWARENESS OF BEACH AND NEAR SHORE AREAS AS
WILDLIFE HABITAT**

OBJECTIVE 2.7 – PROTECTION OF PROTECTED SPECIES (MARINE TURTLE NESTING)

OBJECTIVE 2.8 – LONG TERM COLLECTION OF WATER QUALITY DATA

PUBLIC INFRASTRUCTURE GOAL

**OBJECTIVE 3.5 – IMPROVE WATER QUALITY OF THE GULF AND ST. ANDREWS BAY
SYSTEM BY INSTALLING OR UPGRADING STORMWATER TREATMENT FACILITIES
USING ST. ANDREWS BAY STORMWATER MANAGEMENT PLAN AND SWIM PLAN**

OBJECTIVE 3.7 – INCREASE COASTAL RESILIENCE AND PROTECT KEY PUBLIC ASSETS

GENERAL PROJECT GOALS

REGIONAL BENEFITS – WATER QUALITY FOR NEARSHORE AND GULF

MULTIJURISDICTIONAL (CITY OF PANAMA CITY BEACH AND BAY COUNTY)

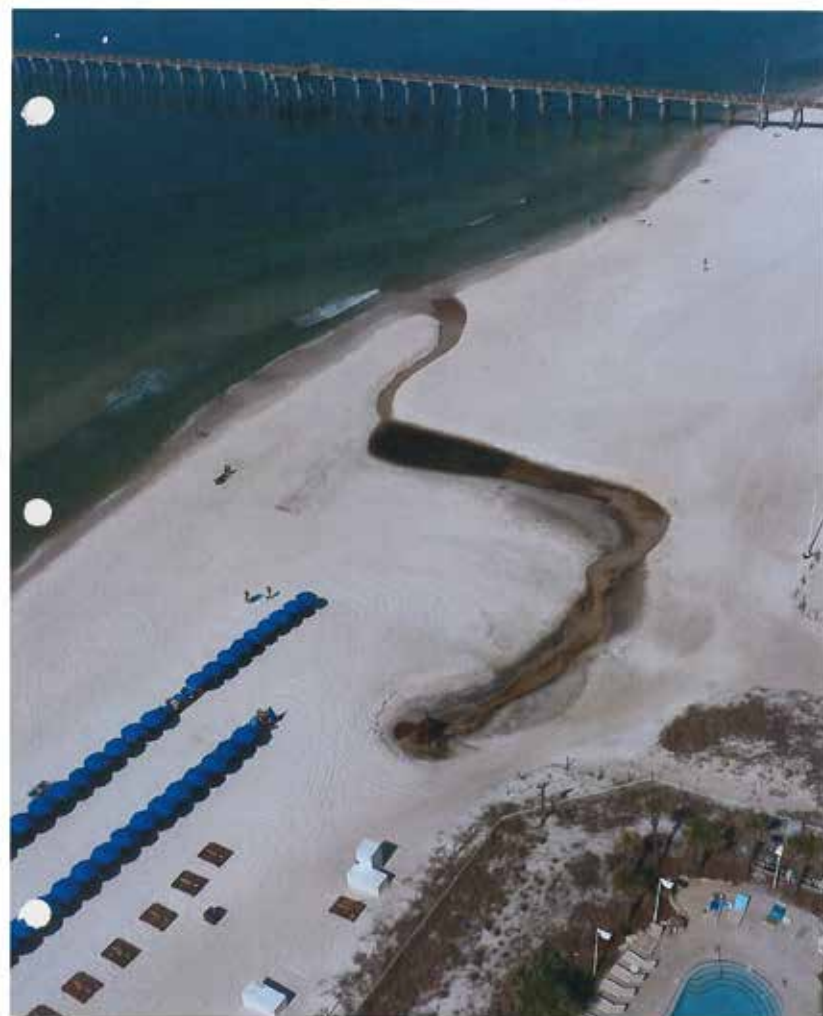
LONG TERM BENEFITS – ECONOMIC (TOURISM) AND ENVIRONMENTAL



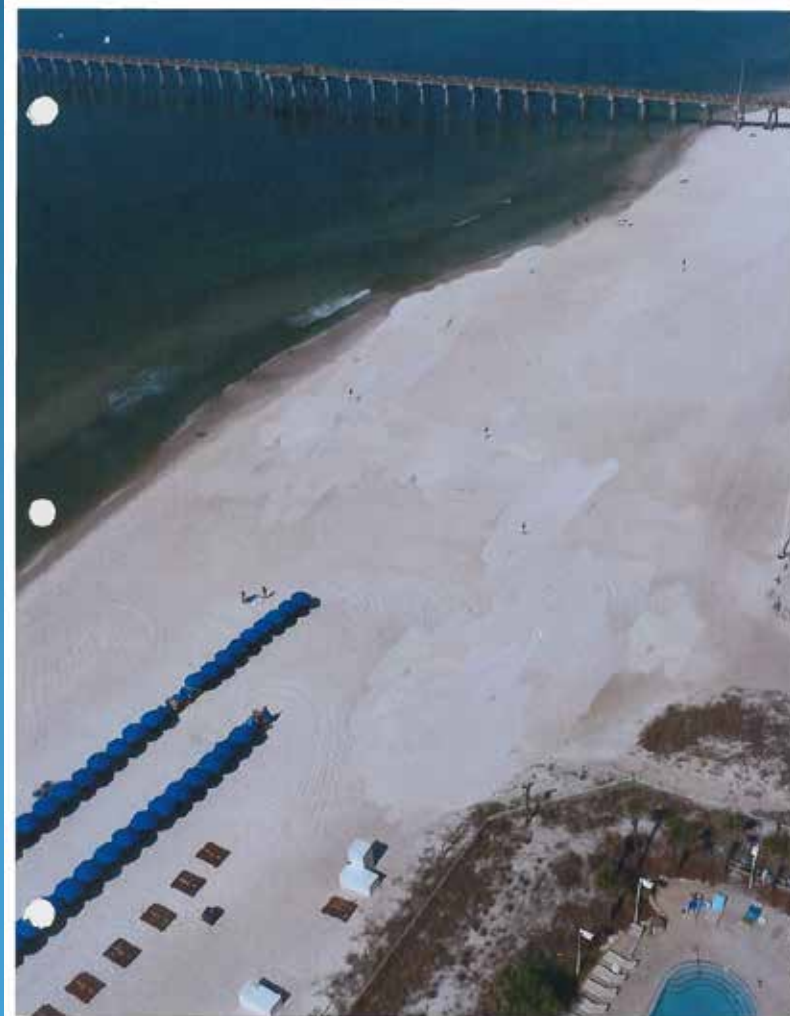
LONG TERM SOLUTION



CALYPSO OUTFALL CURRENT



CALYPSO OUTFALL PROPOSED





LONG TERM SOLUTION



CALYPSO OUTFALL VIEW CURRENT



CALYPSO OUTFALL VIEW PROPOSED

