Highlights from the Early Restoration Programmatic Environmental Impact Statement for the Gulf Coast Marine Fisheries Hatchery and Enhancement Center proposed for Bruce Beach, Pensacola, Florida

HIGHLIGHT SUMMARY

Below you will find a summary of the Early Restoration Programmatic Environmental Impact Statement for the Gulf Coast Marine Fisheries Hatchery and Enhancement Center broken down by environmental issue. All text is taken directly from the report except section titles and that text in red, which was added for clarification and comment.

PROJECT SUMMARY

The restoration work proposed includes the construction and operation of a saltwater hatchery. Hatchery production (with a potential for up to 5,000,000 fish released annually) will be based on the use of intensive (i.e., indoor, tank-based) recirculating aquaculture systems that reduce water usage and effluent discharge (i.e., most of the water is re-used). Effluent will flow through a small constructed filtration marsh composed of native coastal wetland plant species to recycle nutrients from the aquaculture facility as plant biomass which can be used to support ongoing regional coastal habitat restoration efforts.

Early restoration is not intended to, and does not, fully address all injuries caused by the Spill. Restoration beyond Early Restoration projects would be required to fully compensate the public for natural resource losses from the Spill. (In other words, the City has more opportunities to insist on being made whole from damages caused by the spill; notably through the RESTORE process where the City will have much more power to determine project types. The need for water quality improvement and habitat restoration projects has been made obvious through this hatchery project and must be considered when determining RESTORE project funding).

This hatchery project would be consistent with FWC's efforts over the past 25 years to develop a statewide series of marine hatcheries to enhance fishing and promote marine conservation. The FWC has been actively pursuing this goal since development of SERF in Manatee County as a response, in part, to the declines in the harvest of popular sport fish species, particularly red drum, earlier in the 1980s. This commitment to incorporating marine hatcheries into FWC's fishery management activities was further recognized in 2006 with the implementation of the Florida Marine Fisheries Enhancement Initiative, or FMFEI (FWC 2013a).

The proposed hatchery would draw on lessons the FWC has learned in the 25 years of operation of SERF, and incorporate the latest technological advances in fish culture. The state-of-the-art facility would be designed to incorporate intensive aquaculture techniques and approaches, including the use of an

indoor-tank-based rearing system where approximately 80% of the initial saltwater withdrawals from Pensacola Bay would be reused. In addition, the water that is eventually discharged from the facility would go through a treatment process that focuses on the recycling of nutrients. Effluent from the facility would flow through a small filtration marsh composed of native coastal wetland plant species (to be built as part of the hatchery project); the nutrients would provide fertilizer to support an adjoining nursery. Plants produced at the nursery and in the wetland would be used to support ongoing regional coastal habitat restoration efforts.

EVALUATION CRITERIA

As part of the project costs, monitoring will be conducted to ensure project plans and designs were correctly implemented. A detailed project timeline and associated monitoring framework will be developed as the first step in the initial project design phase. Overall project quality control and assurance will be overseen by the Florida Fish and Wildlife Conservation Commission and quarterly progress reports will be prepared to help track the successful implementation, performance, and completion of the various goals and objectives outlined in the scope of work. (Lease will have to be approved before money is released to do the monitoring plan so no comments can be made on it).

PERMITS:

Environmental Protection Agency (EPA) permitting requirements for operating a fish hatchery are detailed in 4 C.F.R. 122, in Sections 1(b)(2)(ii), 24, and Appendix C. Hatcheries producing less than 100,000 pounds of warm-water species per year, as would be the case with the proposed facility, are exempt from obtaining a National Pollutants Discharge Elimination System permit. The hatchery project would be required to obtain an Industrial Wastewater Permit from FDEP. An Aquaculture Certification (Section 597.004, Florida Statute [FS]) would also be required from the Florida Department of Agriculture and Consumer Services (FDACS) Division of Aquaculture. Development of the hatchery project would adhere to the FDACS Aquaculture Best Management Practices Rule

SITE SPECIFICS

Records indicate the Bruce Beach marsh was planted in 1991 by the Florida Department of Environmental Protection's Ecosystem Restoration Section. This mitigation area was formed by the construction of an L-shaped breakwater and infill of submerged lands of Pensacola Bay. Originally, smooth cordgrass (Spartina alterniflora) was established on one-meter centers throughout the entire created area. Hydrology within the site was established through tidal ebb and flow whose influences are manifested by a gap in the constructed breakwater which effectively connected the mitigation site to Pensacola Bay (Wetland Sciences, Inc. 2013).

The Southern Bulkhead Mitigation Area site was designed to compensate for wetland losses incurred with the construction of the southern bulkhead along the waterfront of what is now the Community Maritime Park. This mitigation site was once a channelized canal formerly used to discharge treated effluent from a now decommissioned wastewater treatment plant. The mitigation site is comprised of a meandering tidal channel and low/high marsh areas planted with smooth coordgrass and marsh hay (Spartina patens) (Wetland Sciences, Inc. 2013).

The Community Maritime Park (CMP) wetland mitigation area was established in 2012 to compensate for loss of wetland functions that were eliminated by the construction of the Pensacola Community Maritime Park. The wetland mitigation plan included the creation of a salt marsh consisting of 0.86 acres of oyster reef habitat/breakwaters, 1.96 acres of planted salt marsh, and 1.72 acres of tidal creeks and pools which serve as a waterward extension of the existing Bruce Beach mitigation area. The mitigation plan also included modifications to the existing Bruce Beach Mitigation Area. These modifications included the re-grading of adjacent uplands to intertidal elevations for additional marsh creation and opening the southern end of the site to enhance tidal exchange between Bruce Beach and the CMP mitigation areas. This mitigation site is protected via a conservation easement recorded in OR Book 6417 Pages 1666- 1680 in the official records of Escambia County (Figure 12-40) (Wetland Sciences, Inc. 2013).

These three mitigation areas will not be affected by the construction activities and should benefit from the improved quality of the water returned to the bay through the hatchery's treatment processes relative to the uncontrolled nature of the current surface water runoff from the site. (Should the permit granted for this facility fall in line with the PEIS this statement is true. The key is being engaged and active during the public comment period associated with the permitting process along with both the Technical and Planning Committees.)

A biological survey for the proposed hatchery property was completed in August 2013 (Wetland Sciences Inc., 2013). The survey report confirmed that the site was on human-made land, created in the early 1900s by placing fill in the bay. The 10-acre site is highly disturbed, and is currently covered with excess material including earth fill and limestone riprap that are stockpiled within the property. Additionally, the site is strewn with other historic debris from previous industrial land uses including creosote-treated timber, concrete pilings, concrete culverts, bricks, abandoned rail spur, and other miscellaneous debris. Three patches of semi-native habitat still existed. These areas constitute only about 1 acre and contain canopies of live oak (Quercus virginiana), laurel oak (Quercus laurifolia), and cabbage palm (Sabal palmetto), with a shrub canopy of wax myrtle (Myrica cerifera) and yaupon holly (Ilex vomitoria). A number of invasive species were also present, including Chinese tallow (Triadica sebifera) and chinaberry (Melia azedarach). In addition, the landward side of the mean high water line in the southeast portion of the site contains a fringe wetland consisting of marsh hay (Spartina patens).

WATER QUALITY ISSUES:

A stormwater retention pond would be developed to capture rain water flowing from impervious surfaces on and near the site during storm events. This pond would be used to settle solids and allow for

some groundwater recharge. Pond discharge would be integrated into the surface waters being directly returned to Pensacola Bay from the site. The exact size of the pond and conditions and mechanisms of the return flow to Pensacola Bay (e.g., size of pond related to the amount of impervious surface in the final design) would be defined in the final engineering plans.

Storage pond: A lined storage pond up to 1 acre in size would be used to store hatchery fish production effluent. Effluent would be diverted to the pond after initially filtering out solids inside the facility. The pond would allow for additional settling of solids entrained in the hatchery's fish production water, and the liner would facilitate removal of fish waste and other biological material. Water from the storage pond would flow into the plant production pond.

Plant production pond/filtration marsh: This approximately 2-acre pond or marsh would receive discharge from the storage pond and be planted with native wetland species, including Spartina alterniflora, to uptake nutrients that improve water quality before water would be returned to Pensacola Bay as sheet flow. The wetland plants would be harvested to remove nutrients from the marsh and used to support other coastal restoration projects. To the maximum extent possible, this constructed marsh would be integrated with the existing wetland and marsh mitigation areas that are on and adjacent to the proposed hatchery location.

Parking lot: An on-site lot of approximately 90,000 square feet would be developed to provide parking for hatchery staff and visitors. Access to the lot would be via Clubbs Street, which has minimal traffic and would dead-end at the facility parking lot. (There is potential here for pervious pavement, similar to Escambia County One Stop which will decrease the water quality impacts of stormwater coming from this site).

Habitat features associated with the treatment of the hatchery's production waters would be first designed based on a maximum possible production level. Once these features were constructed, remaining funding would be evaluated to adjust the initial scale of the operation according to resource availability. This process would ensure the hatchery's environmental features would be capable of meeting their treatment demands.

A critical component of the proposed hatchery is taking in seawater needed for operating the rearing tanks before returning the water to Pensacola Bay. The proposed facility would incorporate intensive aquaculture systems that recirculate the water and minimize withdrawal requirements. The goal would be to reduce the volume of water requiring treatment prior to discharge to Pensacola Bay by reusing 80% of the intake water. Seawater would be supplied to the facility through underground piping from a seawater pump station. A pumping station, preferably land based, would supply power and protect the pump(s). Details of this structure would be addressed in the development of final site plans, but would include an occlusion device at the water intake to prevent harm to or uptake of specific marine organisms. Any proposed structure would comply with relevant city, state, and federal permit requirements. Seawater would be treated prior to use. The seawater treatment may include disinfection, either through chlorine or ozone, a settling tank to remove suspended solids, mechanical

filtration, and a water distribution system (valves and plumbing) to direct water to specific areas of the hatchery.

Water that is not reused would be treated in two phases. The first phase would consist of on-site filtration to remove large solids. The solids would be disposed of by Emerald Coast Utilities Authority. Next, the water would flow to the storage pond to allow the settling of additional solids. The remaining effluent would be transported to the plant production pond or filtration marsh where nutrients would be removed by native plants before the water is returned as sheet flow back to Pensacola Bay.

The marsh or wetland would be designed to distribute water equally to the marsh wetland plants to facilitate uniform growth of plants and nutrient uptake by the plants from the waste stream. Several species would be planted in the marsh at strategic elevations to provide the appropriate water inundation or exposure to the plants. The marsh would serve the additional purpose of supplying wetland plants for restoration projects.

With regard to groundwater, the principal water-bearing aquifers are the Surficial Aquifer System (which includes the Sand and Gravel Aquifer) and the Floridian Aquifer System. The Sand and Gravel Aquifer supplies most of the public water supply in Escambia County (NFWMD 2011). Based on Federal Emergency Management Agency (FEMA) flood insurance rate maps (see Panel 12033C0390G), the hatchery project is located in the coastal area located in Zone AE. Zone AE has defined base flood elevations and is an area of special flood hazard (FEMA 2006).

Hydrology of the project site would be affected by the development of the hatchery facility. In the short term, particularly during the period of intensive excavation and grading, there is the potential for increased sediment transport off the construction site during storm events. Incorporation of BMPs for construction (e.g., silt fencing, hay baling sensitive areas) would ensure that these potentially adverse water quality impacts are minimized. Current surface water flows and subsequent discharges to Pensacola Bay are not controlled or actively managed. The development of the stormwater retention area in conjunction with the hatchery development would result in implementation of a coordinated, engineered approach for managing the quality of stormwater, or freshwater flows, or both, and prevent discharge of pollutants into Pensacola Bay.

SERF's success with capturing and controlling surface water flows and improving water quality sets the precedent for the development of a similar system for the proposed hatchery. Monitoring associated with the SERF industrial wastewater permit improved water, resulting in a determination letter from FDEP that the permit was no longer required. Based on this experience and the opportunity to incorporate similar methods and technology, the hatchery project should result in no long-term degradation of water quality. Given potential uncontrolled runoff to the bay, the hatchery project is likely to have short- and long-term benefits to water quality by ensuring discharge to the bay meets strict water-quality criteria for nutrients and other impurities as required by an industrial wastewater permit.

There is the potential for short-term, minor adverse impacts to water quality associated with construction activities but these would be minimized by using BMPs. Over the long term, water quality

of flows on the site and the saltwater discharges used in production would likely result in a minor benefit with the development of the hatchery.

Hurricane-related rainfall is projected to continue to increase. Models suggest that rainfall would arrive in heavier downpours with increased dry periods between storms. These changes would increase the risk of both flooding and drought. The coasts would likely experience stronger hurricanes and sea level rise. Storm surge could present problems for coastal communities and ecosystems. (A Hurricane Response plan is essential to reducing the potential impacts from this project. Although the discharge pond is lined, a large storm has potential to wash all contents into Pensacola Bay. Council could require this as a stipulation of a lease agreement).

GROWING AND RELEASING THE FISH

In the grow-out tanks, the fish would be raised on a diet of live feed, phytoplankton and/or zooplankton, which would be produced on-site in the separate live feed room. Growth of hatchery fish would be monitored and graded by size. Fish would be transferred over time to a series of tanks to minimize cannibalism until they reach the desired size for release. The goal for the phase 1 size is approximately 1.25 inches. When the fish reach this size, they would be collected from the tanks and transported by truck and/or boat to release sites identified by FWC staff. These sites would be located in suitable habitat for juvenile fish such as seagrass beds located throughout the northern Gulf of Mexico. (FWC has proposed a Technical Advisory Board which, among other things, would help to determine which species should be raised and formulate a release plan).

Production of reared fish would take place indoors at the hatchery, rather than in outdoor holding and rearing ponds common to similar facilities. Hatchery fish production would be based on the use of intensive (i.e., indoor, tank-based) recirculating aquaculture systems that reduce water usage and effluent discharge (i.e., most of the water is reused). Effluent would flow through a small constructed filtration marsh composed of native coastal wetland plant species to recycle nutrients from the aquaculture facility as plant biomass, which can be used to support ongoing regional coastal habitat restoration efforts.

FWC does not include an evaluation of how the development of the hatchery and subsequent release of hatchery fish affects recreational angling in the state as part of their monitoring program. Anecdotal evidence from the Tampa Bay fishery, which receives fish from SERF's operations, suggests recreational anglers are aware of hatchery releases and may target their recreation to receiving waters. If the hatchery operations result in maintaining or increasing fish stocks, recreational fishing would receive a minor, long-term benefit.

AIR QUALITY ISSUES

The project would have short-term, minor impacts but no long-term impacts on GHG emissions. Mitigation measures would minimize GHG emissions.

Long-term air quality impacts from the hatchery operation are expected to be minor. The integration of energy efficient equipment and a facility design and construction focused on the use of green technologies (for instance, those incorporated as part of LEED or similar certification) would offset any short-term, minor contributions of GHGs. (Use of LEED certification for the building sould be a stipulation of the Lease as required by the Green Building Ordinance) Energy efficiency would help minimize the hatchery's net electricity consumption and thereby help minimize emissions of GHGs associated with the electricity used to operate the facility. At the same time, the development of vegetated areas, particularly the plant production pond or filtration marsh, would increase on-site vegetative production and act as a potential minor carbon sink.

NOISE

As a result, short-term noise impacts are expected to be minor, but would impact at least one local business, Nick's Boathouse, a restaurant at the adjacent marina, less than 0.25 mile to the east.

Potentially loud equipment would be during various phases of construction. Noise levels would depend on equipment being used and tasks being performed. Therefore, levels of noise would vary from low to moderate during the 12-month construction period. In the long term, noise impacts would be minor.

VEGETATION

Hatchery development would include a 2-acre plant production and filtration marsh that would enhance the site's vegetation by planting native wetland species, thus producing more habitat diversity than currently exists at the site. In addition, the project would have beneficial impacts to existing upland native vegetation and newly planted wetland species as a result of the removal of exotic plants at the site. The proposed project would, therefore, have a minor, long-term benefit on vegetation resources at the proposed site.

MARINE RESOURCES:

No negative impacts to coastal and marine resources are expected from the development of the proposed hatchery. Assuming accurate analysis of the genetic risks (FWC 2009a), the release of Phase I hatchery fish would have a long-term benefit on estuarine and marine resources by supplementing native populations of three fish species. The success of the hatchery releases would be determined by an ongoing comprehensive monitoring program. Specific objectives of this monitoring program would

be to estimate the short- and long-term survival of stocked fish; the potential long-term impact on wild sport fish populations; and the respective contributions of hatchery fish to local fish populations and recreational catches. Methods that may be implemented as part of a multidisciplinary and integrative monitoring program to evaluate hatchery program success are described below:

The hatchery project site is located in waters of Pensacola Bay designated as Critical Habitat Unit 9 by the USFWS for the gulf sturgeon (Acipenser oxyrinchus desotoi), a species federally listed as threatened and state-listed as a species of concern. The project area does not overlap Unit 9, but rather is adjacent to it as it borders the shoreline's mean high water line (Federal Register 2003).

Gulf sturgeon are restricted to the Gulf of Mexico and its drainages, occurring primarily from the Pearl River in Louisiana to the Suwannee River, in Florida (NMFS 2009). Adult fish reside in rivers for 8 to 9 months each year and in estuarine or Gulf of Mexico waters during the 3 to 4 cooler months of each year (NMFS 2009). Important marine habitats include seagrass beds with sand and mud substrates (Mason and Clugston 1993). Gulf sturgeon critical habitat was jointly designated by the NMFS and USFWS on April 18, 2003 (50 C.F.R. 226.214). The proposed project site is located within the Florida Nearshore Gulf of Mexico Critical Habitat Unit 99, which contains winter feeding and migration habitat for Gulf sturgeon.

EFH is defined in the Magnuson-Stevens Fishery Conservation and Management Act as "those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. The NMFS has identified EFH habitats for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine emergent wetlands, seagrass beds, algal flats, mud, sand, shell, and rock substrates, and the estuarine water column. The EFH within the project area include emergent wetlands, mud substrate, and estuarine water columns for species of fish, such as red drum, brown shrimp, pink shrimp, and white shrimp. There are no marine components of EFH in the vicinity of the project site.

For projects in waters accessible to sea turtles, NMFS has developed standardized Sea Turtle and Smalltooth Sawfish Construction Conditions (NMFS 2006). These conditions are typically applied to projects as part of the Clean Water Act Section 404 permit issued for in-water work. It is unlikely that the project site contains submerged aquatic vegetation, which is the preferred foraging habitat of sea turtles, but it cannot be ruled out entirely. An occlusion device at the water intake would be installed and would be designed to prevent harm to sea turtles and prevent pump malfunction or damage.

Construction of the intake for seawater withdrawal may lead to minimal adverse physical impacts and habitat conversion of EFH on a limited scale. The hatchery development would likely improve water quality returning to Pensacola Bay relative to current conditions, thereby benefiting EFH. The combination of a very limited potentially adverse impact caused by pier construction and the beneficial impacts of stormwater management and treatment, the proposed project is not likely to adversely affect EFH in the project area.

Potential impacts to the bald eagle would be short term and minor.