# FLORIDA GULF OF MEXICO RESTORATION PROJECT SUBMITTAL FORM

Submit by Email

**Form Purpose and Instructions:**

- To assist the project proposal and review process, please complete this Submittal Form. Completion of the Form will contribute to the appropriate information being completely and accurately submitted for each project.
- Take as much space as needed for each question, but please keep responses as focused as possible. It may assist you to review all the questions before addressing any one question.
- If you have multiple projects – please submit one Form for each project.
- When you have completed the form hit the submit button in the upper right hand corner. Once your Form is successfully submitted, you will receive a confirmation email from the Florida Department of Environmental Protection.
- Submit all back-up maps, information, etc. to Restoration.Projects@dep.state.fl.us
- To submit updated information, please fill out this form and update fields as needed.

All of the following are **Required Fields** for project updates

**New Project** ☒ **Update to Previous Submittal** ☐ **Project #**

**Project Name** Lake Charlene / Bridle Trail

**Contact Information:** *(Include at least one name, phone number, email address, and organization name if applicable)*

Shelly Marshall; 850-595-3460; smarshall@myescambia.com; Escambia County

**Project Location:**

*(Include a map, if possible, and the city, county, watershed, longitude/latitude dec.deg, Parcel # if Applicable)*

See attachment for Map; Escambia County; Perdido Bay Watershed; 30.407906, -87.301449

Location Description: The Lake Charlene/Bridle Trail area lies within the Warrington and Bayou Marcus Basin Study areas. This project will divert stormwater from the Lake Charlene/Bridle Trail area into Turtle Lake Swamp. This Swamp is in the Bayou Marcus Basin and outfalls into Perdido Bay. The neighborhoods are located between Highway 98 and Lake Charlene. This system is primarily comprised of several small storm sewer systems that discharge to Lake Charlene. Lake Charlene pops off through a sluice gate to an open channel system where it discharges through a large pipe system to Jones Swamp Creek which eventually flows into Bayou Chico. The emergency overflow will pop-off into Turtle Lake Swamp located in the Bayou Marcus Watershed. This Watershed is located in the Southwestern portion of Escambia County and outfalls to Perdido Bay.

**Project Description:**

*(Describe all aspects of the project)*

This project improves coastal flood protection by retrofitting and replacing existing stormwater management infrastructure, strategically adding new stormwater management components,

increasing attenuation volume, and enhancing species habitats and existing ecosystems. Water quality enhancements will be provided via a phased approach consisting of erosion stabilization, stormwater infrastructure improvements, and stormwater runoff treatment. The Bridle Trail Project will install an emergency outfall from the Bridle Trail Pond to a County owned wetland named Turtle Lake Swamp west of Cambellton Lane. Installation of the emergency outfall will reduce flooding in Bridle Trail and Lake Charlene areas.
Phase I will obtain permits, design an emergency outfall from the Bridle Trail Pond and install a stormwater system to Turtle Lake Swamp.
Phase II will facilitate construction of the project and set the stage for the community to start receiving benefits. The emergency outfall will be constructed and stormwater system installed reducing flooding in the Lake Charlene/Bridle Wood area.
Phase III consists of wetland restoration. Escambia County recognizes the significant and economically valuable contributions wetlands make to clean water, flood prevention, recreation, scenic beauty, and wildlife habitat. Restoration goals include reestablishment of wetland conditions similar to the original conditions prior to alteration by human activities, removal of invasive species, and providing nest boxes for wildlife.
Phase IV is the operation and maintenance of the constructed facilities and monitoring of the improvements. An educational component will include a boardwalk and signage to allow residences access to restored wetland to view and read about wetland vegetation and aquatic and avian creatures.

**Estimated Project Costs:**

*(Describe the estimated costs of the project, including any assumptions for contingency and ongoing operations/maintenance. Identify other secured funding sources such as matching funds, in-kind contributions or state/federal dollars. In addition, if possible, complete and submit the Cost Appendix Sheet associated with this Form)*

Phase I will include design, permitting, final cost estimating, and preparation of construction bid packages for each basin area. Preliminary studies identified the need for these improvements in the Warrington Basin Study conducted in 2007. Estimated cost is $100,000. Phase II will facilitate construction with an estimated cost of $700,000. Phase III will facilitate wetland restoration at an estimated cost of $100,000. Phase IV will consist of the operation and maintenance of the constructed facilities and monitoring of the improvements with an estimated cost of $80,000 per year for five years. This will bring the overall estimate project cost to $1 Million.

**Other Funding:**

*(Indicate if the project is submitted for any potential funding or if it may be used to leverage additional funding, if so, please describe the funding source [e.g. State/Federal Grants])*

On November 6, 2014 Board awarded and authorized the County Administrator to sign the Standard Professional Consulting Services Contract Documents for Agreement between Escambia County and HDR Engineering, Inc, per the terms and conditions of PD 13-14.081, Lake Charlene Area of Warrington Basin Study, for a lump sum of $133,746.77. Lake Charlene has received a HMGP grant funding in the amount of $330,000. The estimated Escambia County matching LOST funds for the project is $498,077.25. Leveraged funds total: $961,824.02. If funded, Escambia County RESTORE Direct Component would likely contribute a portion.

**Technical Feasibility:**

*(Describe the technologies involved and any relevant past experience or proven success with similar projects)*

Basin studies have already been completed and preliminary designs have been made. Escambia County is very experienced in these types of projects. Flooding projects are a priority for Escambia County and are seeking grant funding so projects can incorporate restoration aspects beyond a typical drainage project.

**Conflicts or Complements to Existing Efforts:**

*(Describe any ongoing activities in the project implementation area, if the project is part of another plan, and why the project does or does not interfere with that work. Please consider how the project may complement existing local, regional, and state efforts/plans/objectives)*

The Lake Charlene project has received a grant from HMGP which will increase the outfall capacity from Lake Charlene and further reduce residential and street flooding during 100-year storm events. However, it did not include the complementary Bridal Trail projects. Design options already exist for the Bridle Trail emergency overflow structure. These options would be evaluated and the design started within a few months pending funding.

The Lake Charlene/Bridle Trail project will implement the basin recommendations with increased stormwater treatment, and control of stormwater runoff thereby, improving the health and ecological functioning of Jones Creek, Bayou Chico, and impaired 303d listed waterways. The Bayou Chico Watershed consists of two Class III freshwater bodies (Jones Creek and Jackson Creek) and four Class III marine water bodies (Bayou Chico, Bayou Chico Drain, Bayou Chico Beach, and Sanders Beach) suitable for recreational use and the propagation and maintenance of a healthy, well-balanced population of fish and wildlife. Due to high levels of fecal coliform bacteria, these six water body segments in the Bayou Chico Basin do not support these uses. In 2008, FDEP adopted water quality restoration targets, called Total Maximum Daily Loads (TMDLs) that provided numerical water quality restoration targets. Replacing box culverts with a bridge encourages creek free flow without obstructions, increases flushing volumes for the Bayou system, and provides for sustainability during future storms and disasters.

**Complies with Federal, State, Local, and Tribal Laws/Regulations:**

*(Describe any concerns or potential conflicts)*

The project will be designed in accordance with Escambia County Technical Specifications, Escambia County's Land Development Code (LDC), and Florida Department of Transportation (FDOT) requirements. Environmental permitting will comply with the Florida Department of Environmental Protection (FDEP), National Pollutant Discharge Elimination System (NPDES), and Army Corp of Engineers (USACOE) regulations. American's with Disabilities Act (ADA), and State Historical Preservation Office (SHPO) regulations will be followed. Project advertisement and award of this project will conform to all Local, State, Tribal, and Federal requirements.

**Readiness for Implementation:**

*(Describe if the project has had any design or permitting work started or completed [attach permits or design work]. Please address any issues that may delay start or finish of the project)*

This project is ready to begin upon funding awarded. Phase I - design, permitting, and surveying

of the Bridle Trail emergency overflow structure will take approximately 5 months. Phase II - construction will take approximately 5 months. Phase III - activities to restore Turtle Lake Swamp will take approximately 6 months. Phase IV - operation, maintenance, and monitoring will be on-going for generations.

Permits are required to construct this project. The permitting requirements will include FDEP and USACOE Wetlands Resource Permits. The construction phases will also require NPDES permitting for large and small construction activities. Escambia County will also require Right of Way permits for the work and road closure. Permit applications will be submitted once design funding has been obligated.

Drainage easements will be acquired through donations and/or purchase using Local Option Sales Tax funds and/or Amendment 1 funding. Consideration to transfer an EPA conservation easement to FDEP will be discussed during planning of this project with EPA, FDEP and Escambia County.

**Environmental Benefits:**

*(Describe the nature, magnitude, and timing of any environmental benefits attributable to the project. If possible, describe potential environmental performance measures [e.g. pollutant reduction]. Please address any potential environmental impacts associated with implementing or maintaining the project [e.g. loss of a habitat or conversion of habitat from one type to another during implementation])*

a. Habitat Restoration - This project will reduce wetland impacts and restore Turtle Lake Swamp wetlands. Construction of stormwater treatment facilities and a reliable emergency stormwater overflow will better control flooding and improve water quality. Ponds attenuate peak stormwater flows and provide stormwater treatment by reducing sediments, nitrogen, and phosphorus pollutant levels. Wet stormwater pond areas will be stabilized with native wetland plants that will also contribute to TMDL reductions through plant uptake action. Reduced pollutant loadings and restored wetlands will ultimately improve the habitat for both aquatic and avian species found in Turtle Lake Swamp, Jones Swamp Creek, and Perdido Bay.
b. Habitat Conservation & Preservation - The 50-acre Turtle Lake Swamp lies within an EPA conservation easement and is owned by the County. Coordination between Escambia County, FDEP, and EPA is encouraged to discuss wetland restoration. Plans for wetland restoration include removal of non-native species, planting native flora, and habitat creation. The restored conservation easement will support mammals, birds, invertebrates and provide a range of ecosystem services that benefit humanity, including water filtration, storm protection, and flood control. In addition this project will increase the outfall capacity from Lake Charlene thereby reducing residential and street flooding during 100-year storm events.
c. Water Quality Improvements - This project is expected to improve the environmental areas along Bayou Marcus, and Perdido Bay by implementing stormwater best management practices and reducing pollutant loadings that will be trapped within vegetated buffers along Lake Jackson and Turtle Bay Swamp. Perdido Bay encompasses an area of about 50-square miles with the shared state line running approximately down the centerline of the bay. It has an elongated shape which lies along a northeast-southwest axis. The upper part of Perdido Bay and to some extent lower Perdido Bay are polluted with wastes from paper mill effluent. Known fish species in the Bay include: Redfish, Speckled Trout, Flounder, Sheephead, Bluefish, Drum, Lady Fish, Spanish, and Bonita. Water quality improvements occur when non-point pollution generators such as roadway, commercial and residential runoff of oils, grease, pesticides, animal waste, and fertilizers are diverted into stormwater treatment facilities, such as wet detention ponds. Wet detention ponds such as those in Jackson Lake and Bridle Trail treat stormwater runoff by allowing time for TMDLs, sediments, nitrogen, and phosphorus to settle-out or be naturally removed through native wetland plant uptake action. The ponds will also attenuate peak stormwater flows for the critical duration of designed storm events.

d. Natural Systems Resiliency - Turtle Lake Swamp wetland restoration plans will rehabilitate the wetland. The Bridle Trail wetland restoration project seeks to increase the capacity of the wetland as habitat for amphibians and native wetland plants, and acts as a purifier of runoff from adjoining developed areas. Wetlands are vital to the health of our environment. They perform the same function for our ecosystem that kidneys do for our bodies - they filter and remove pollutants. As water passes through a wetland, much of the pollution that is dissolved or suspended in the water is trapped and taken up by wetland plants and soils. Many pollutants, which would otherwise degrade surface waters, are converted into food material for aquatic plants and animals. The capability to filter rainfall and runoff helps to keep our surface waters fit for swimming, fishing, and in many instances, drinking. Restoring the wetlands will improve the Bayou Marcus watershed. As the Bayou Marcus watershed improves, the habitat for both aquatic and avian species found in Bayou Marcus will increase. In addition, a more permanent and thriving ecosystem can be established along the creek and outfall hence preserving the habitats for the indigenous creatures in the area.
e. Green Design - According to the Environmental Protection Agency (EPA) green infrastructure uses natural hydrologic features to manage water and provide environmental and community benefits. Stormwater runoff is a major cause of water pollution in urban areas. When rain falls in undeveloped areas, the water is absorbed and filtered by soil and plants. When rain falls on our roofs, streets, and parking lots, however, the water cannot soak into the ground. The Lake Charlene/Bridle wood project will restore Turtle Lake Swamp. These wetlands will retain and filter water and support water-loving vegetation and soils, they fulfill critical ecological needs, cycling nutrients and providing habitat for a range of species, and they serve as buffers or transitional environments between different ecosystems.
f. Sustainability & Efficiency - The Lake Charlene/Bridle Trail Project will significantly improve the environmental sustainabilityof transportation within the project corridor. The project minimizes negative environmental impacts by installing stormwater infrastructures that will reduce flooding to roadways, residences and business. Stormwater infrastructure will last 50+ years when maintained properly. Drainage improvements, structures, and ponds will be constructed to meet today's standards and the critical duration of typical storm events. Additional armoring and safeguards for key drainage components will be analyzed and improved for sustainability. Project improvements to better manage stormwater, protect roadway infrastructure, decrease pollutant loadings, and enhance environmental features preserve and benefit the community and all public users of the Watersheds and Bays.

**Economic and Social Benefits:**

*(Describe the economic and social benefits including those related to the project's improved ecosystem services and any estimates on jobs created or preserved)*

a. Tourism & Tourism Opportunities -Phase III consists of the restoration of Turtle Lake Swamp wetland restoration. Restoration goals include re-establishment of wetland conditions similar to original natural conditions prior to alteration by human activities, removal of invasive species, and providing nest boxes for wildlife. Future activities include installing boardwalks and signs for educational purposes. The boardwalk will provide for hiking tourism and school field trip opportunities.Residences in close proximity of Lake Charlene/Bridle Trail can visit Lake Charlene and Turtle Lake Swamp year round. Upon completion of the Turtle Lake Swamp restoration project, a future connecting boardwalk system will be considered.
b. Recreational Fishing & Local Seafood - This project will have positive environmental effects on Bayou Marcus, Perdido Bay and Bayou Chico. Pollutant loads will be reduced and TMDL targets for bacteria will be obtained. FDEP, the Northwest Florida Water Management District (NWFWMD), Escambia County, scientific, educational, and citizen organizations are all working to develop strategies for protecting and restoring water within the Perdido Watershed as proposed by this project. Known fish species in this area include: Redfish, Speckled Trout, Flounder, Sheephead, Bluefish, Drum, Lady Fish, Spanish, and Bonita. By improving the water quality fishing opportunities and consumption will be increased.

c. Job Creation -Phases II and III construction and wetland restoration will create temporary, part time, and full time jobs for the community. Stormwater facility construction requires highly specialized and skilled workers to complete. These highly skilled workers demand a wage that exceeds Escambia County averages as these tasks require attention to detail and a depth of knowledge of the design specifications and standards. New infrastructure will be installed requiring trained utility company personnel to design and relocate utilities within the project area. Project managers supervise this work effort and ensure quality control. Experienced project managers require higher pay for their many years of experience and expertise. Phase IV is the operation and maintenance of the constructed facilities and monitoring of the improvements. Facility inspections, Geographic Information System (GIS) tracking, and water monitoring will create and/or preserve year round jobs for personnel performing these functions. Stormwater facilities will have to be routinely inspected and maintained. Water quality testing will be conducted by FDEP and the ECHD. According to Table 5 of the Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009, $92,000 of government spending creates 1 job-year. Using a conservative estimate of 10 jobs per $1 Million spent, this project is anticipated to create 10 jobs. This project will stimulate the economy through increased local spending and increased business activities.
d.Industry & Business Growth - This project will utilize materials and requires services including: piping, concrete, vegetation, equipment, fuel, local contractors, engineers, environmental specialists, surveyors, and utility company personnel throughout the project design and construction phases.
e. Workforce Development - Escambia County, FDEP, ECHD and NPDES programs often hire students or retain interns from the University of West Florida seeking STEM degrees in Civil Engineering, Environmental Engineering, Construction Management, Construction Engineering, Biology, Botany, Surveying, and Environmental Science, etc. These professional disciplines provide a vital source to the Engineering and Construction industry. Typical services from these professionals include engineering design, construction, management, environmental planning and monitoring, plant and aquatic species identification, sampling and analysis of TMDLs and fecal coliform counts in Bayou Grande, Jones Swamp and connecting waterways. Advancement for part-time and full-time openings for younger and unskilled workers who are dedicated is always available for first jobs in the construction industry. Many local leaders began as laborers who became skilled and trained through experience, pursued their education goals through discipline, and worked their way up through the ranks.
f. Transportation Network Improvements - This area has experienced flooding over the years, most specifically during April 2014 and June 2012. The April 2014 Storm Event caused flooding to over 200 residential structures, and loss of community-wide services including the Escambia Community Area Transit (ECAT)system, and evacuation of the County jail. The Storm caused substantial roadway and residential flooding making many properties inaccessible to Emergency Response personnel. This project will increase the outfall capacity from Lake Charlene and include construction of a reliable emergency overflow structure designed to withstand 100-year storm events. Installation of the emergency outfall will reduce Bridle Trail area flooding. By implementing this project flooding, economic loss and the risk of infrastructure damage during natural disasters will be reduced, roadways would remain open for emergency personnel, law enforcement, and school buses, and community-wide services will not be interrupted.
g. Flooding Improvements - Upon completion of the project, the potential for flood damage in the Lake Charlene/Bridle Trail areas will be greatly reduced. Approximately 89 residences will be protected as demonstrated with a recent flood stage model for 100-year events, and an estimated of 2,387 people will also benefit from reduced impacts. The project will install additional outfall piping to increase drainage capacities, lower the level of Lake Charlene, and install an emergency overflow structure in Bridle Trail. Improvements will reduce the risk of flooding, maintain emergency response times, protect community-wide services, and enhance community resiliency during natural disasters. Stormwater improvements will be built to today’s

standards with an emphasis on sustainability. Additional armoring of stormwater structures and key component upgrades are proposed to deter erosion, undermining, and failure. Improvements will detain stormwater longer so systems are not immediately overwhelmed, outfall routes will be built to meet current standards, and designs with attention to detail will deter flooding.
h. Benefits Underserved Persons/Areas - The project lies within the Warrington and Bayou Marcus Basin watersheds located in the south western portion of Escambia County. Branch B, a 748-acre watershed, is located in the area between Highway 98 and Lillian Highway. Reduced flooding in this area allows ECAT bus routes and ADA sidewalks open for those using the bus or walking, biking, or using a wheelchair to travel to work, school, shopping and church.
i. Community Health - Flooding is often the most frequent type of major disaster. It can pose substantial social and mental health problems that may continue over extended periods of time. Flooding can challenge the psychosocial resilience when people are affected. However, flooding also stands out from some other types of disasters because, often, it is possible to prevent flooding by using flood-prevention measures such as those proposed by this project. Upon completion of the project an estimated 2,387 people will get relief from future flooding. In addition, the project will improve water quality in Bayou Chico, and Perdidio Bay where locals fish, swim, boat, and enjoy recreational water sports. Boardwalks and signage installed in Turtle Lake Swamp will provide hiking opportunities improving health and educational benefits.
j. Neighborhood Benefits - The Lake Charlene/Bridle Trail area has experienced flooding during several events over past and homeowners are reluctant to evacuate their homes due to fear of looting. By implementing this project flooding will be reduced, routes would remain open for schools, businesses, and emergency personnel. Law enforcement response times and routine routes would be maintained during disasters which will deter crime.
k. Education & Awareness - With schools and residences in close proximity of the Lake Charlene/Bridle Trail, opportunities exist to use a hands-on scientific assessment and field exploration of Lake Charlene and Turtle Lake Swamp. Children can be taught that Lake Charlene functions as a stormwater pond where polluted stormwater runoff is collected and held before it is allowed to reenter the natural system, and water quality is improved by the filtering ability of wetland vegetation growing around the banks. Reconnecting children with wetlands provides a diverse wealth of knowledge on habitats and animal life, and teaches children the value of these underappreciated ecosystems.
l. Environmental Outreach - Wetland restoration is an essential function of the Lake Charlene/ Bridle Trail project to protect, improve, and increase wetlands. Wetlands that have been filled and drained retain their characteristic soil and hydrology, allowing their natural functions to be reclaimed. Restoration is a complex process that requires planning, implementation, monitoring, and management. It involves renewing natural and historical wetlands that have been lost or degraded and reclaiming their functions and values as vital ecosystems. Restoration utilizes volunteers and co-op students to implement restoration to instill these values in the public.
m. Cultural & Historic Resources - This project will be reviewed by the Florida Department of State, Division of Historical Resources, State Historical Preservation Office (SHPO), for clearance or conditions for implementation as it relates to preservation, protection or restoration of cultural, historical, or archaeological significant resources. The review will be conducted in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations in 36 CFR Part 800: Protection of Historic Properties. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the project will cease all activities the Florida Department of State, Division of Historical Resources, Compliance Review Section will be contacted. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance with Section 872.05, Florida

Statutes.

**Community Resilience:**

(Describe if the project assists Florida's ability to anticipate, withstand, or recover from hazards or threats [e.g. hurricane preparedness, establishing living shorelines])

Flooding during significant rain events and hurricane disasters causing widespread debris along local roadways and is a contributor to community isolation and vulnerability in the Gulf Region. Response times for law enforcement and emergency response personnel are directly impacted and communities suffer. The best solution is to prevent flooding and to escape areas that are prone to hurricanes and natural disasters during those events. This project will address known flooding issues that have plagued this community. Restoration and enhancements of existing wetlands, installation of stormwater infrastructure, and improvements for pedestrians along roadways help to keep a community on its feet immediately following a disaster. Wetlands can accommodate unexpected widespread runoff when they are functioning properly. Functioning stormwater systems reduce the potential for flooding and provide safeguards through attenuation. These efforts will provide future sustainability, reduce flood damages, and keep roadways open for emergency personnel, law enforcement, school busses.

**Public Acceptance:**

*(Describe any known or potential public approval or opposition to the project)*

The Lake Charlene/Bridle Trail project is located in the Zone X per the FEMA FIRM map panel, which means it is considered moderately prone to flooding. Moderate Flood hazards are areas between the limits of the base flood and the 0.2 percent annual chance (or 500- year) flood. In addition the project is located in the X Zone per FEMA Flood Insurance Rate Map numbers 12033C0370G and 12033C0368G, both dated September 29, 2006. However, this area has experienced flooding during multiple storm events, most recently during the April 2014 event. Other documented flooding events include: March 1979, April 2005, and June 2012. Upon completion of the project, the potential for flood damage in the Lake Charlene/Bridle Trail areas will be reduced, according to recent flood stage modeling, approximately 89 residences can be protected during a 100-year storm event, and an estimated 2,387 people will benefit from other previous drainage issues. In addition, the 50-acre Turtle Lake Swamp wetland restoration improvements will provide opportunities for the community to explore wetlands, develop watershed stewardship, and learn about native plants.

***Additional Information you wish to provide:***

*(Please include any maps, designs, drawings, photos or background resources that may assist in completely and accurately understanding the project. If these are too large to attach here, please email them to*

Restoration.Projects@dep.state.fl.us

Monitoring: Phase IV is the operation and maintenance of the constructed facilities and monitoring of the improvements. FDEP and the Escambia County Health Department (ECHD) both monitor water qualities in these bodies. Data collected from these agencies will be compared to previous data to track improvements in the area.

# Cost Appendix Sheet

| Cost Item | Cost Estimate |
|---|---|
| **Planning** | |
| Contracts | 100,000 |
| Feasibility | |
| Engineering, Design, Land Rights & Bid Prep | |
| Restoration Plan | |
| Site Visits & Cost of Site Selection | |
| Administration, Overhead and Indirect | |
| Other | |
| **Planning Subtotal:** | 100,000 |
| **Construction** | |
| Contracts | 800,000 |
| Administration & Mobilization/Demobilization | |
| Other | |
| **Construction Subtotal:** | 800,000 |
| **Monitoring** | |
| Contracts | 100,000 |
| Data Collection | |
| Monitoring Administration | |
| Other | |
| **Monitoring Subtotal:** | 100,000 |
| **Project Cost** | |
| Supervision | |
| **Subtotal:** | 1,000,000 |
| Contingency *(traditionally calculated at 10% of the subtotal)* | 100,000 |
| **TOTAL:** | 1,100,000 |

## Estimated Costs by Year

| | |
|---|---|
| Year 1 | 900,000 |
| Year 2 | 22,000 |
| Year 3 | 22,000 |
| Year 4 | 22,000 |
| Year 5 | 22,000 |
| Year 6 | 22,000 |