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To: Daniel Kolodny, IRLNEP Chief Operating Officer  
From: Bryant Smith III, P.E., CFM, City of Cocoa Public Works Director and City Engineer  
Date: January 5, 2022  
Subject: Indian River Lagoon National Estuary Program Category 1 Water Quality Restoration Projects RFP – City of Cocoa

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Please utilize this letter as meeting the requirements of a cover letter on behalf of the City of Cocoa, grant applicant. There are no additional partners and therefore additional support letters will not be supplied. Please accept this application on behalf of the City of Cocoa for the Indian River Lagoon NEP Category 1 Water Quality Restoration Projects. The City is grateful for the opportunity to submit this application and look forward to the potential opportunity to partner with the IRLNEP through a collaborative effort to continue with the mission of restoring Our Lagoon.

Regards,

*Bryant Smith*

Bryant Smith III, P.E., CFM  
Public Works Director and City Engineer  
City of Cocoa

CC: Kathy Hill, IRLNEP Deputy Director  
Stockton Whitten, City of Cocoa City Manager

City of Cocoa, Florida - Dixon Blvd at Indian River Drive Water Quality and Resiliency  
Indian River Lagoon National Estuary Program  
FY 2023 Proposal Application

**Executive Summary**

| Dixon Blvd at Indian River Drive Water Quality and Resiliency Project |   |
|---|---|
| <b>Lead Organization and Partners:</b>                                | City of Cocoa   |
| <b>Project Location</b>   | Eastern Terminus of Dixon Blvd at the intersection of Indian River Drive, in Cocoa, Florida.<br>Lat: 28°22'52.21"N Lon: 80°44'10.72"W |
| <b>Key CCMP Vital Sign(s):</b>  | Impaired Waters, Stormwater, Trash-Free Waters, Climate-Ready Estuary<br>Citizen Engagement and Education                             |
| <b>IRLNEP Contribution and Source:</b>                                | \$40,000  |
| <b>Partner Match:</b>   | \$40,000  |
| <b>Total Project Cost:</b>  | \$80,000  |

**Project Description:**

This project will provide stormwater treatment and resiliency at Dixon and Indian River Drive (IRD). The project will elevate the roadway providing resiliency and safety. Also, an existing 19"x30" drainage pipe will be transitioned from a direct untreated outfall to the Indian River to a NRFS Baffle Box. This project will also seek to tie in additional untreated outfalls on IRD to treat stormwater prior to entering the Indian River. This should provide treatment to two or more direct outfalls, out of the over 65 within the City of Cocoa, to the Indian River. This project helps to address four of the CCMP Vitals, which are listed in the table above. The NRFS will help treat stormwater and remove trash before entering into an impaired body of water. The City of Cocoa anticipates including a small pedestrian and bicycle lookout at the discharge location. This will provide a much-needed rest stop for both bicyclists and pedestrians using the Indian River Scenic Drive. An educational display will be included showing the benefits of this project and by providing resources to users on what they can do to help achieve our goal of a clean lagoon. The preliminary design of this project is currently underway. The requested funding within this proposal is for the final design and permitting needed prior to construction.

Area Treated: Approximately +/- 37 Acres

TN & TP removed: 98.36/15.538 #/year, respectively

\*Note: these are preliminary numbers that would be finalized at the conclusion of the preliminary design phase.

**Key Outputs (Deliverables):**

- Preliminary Design – In-progress. The anticipated completion is Spring 2022.
- Final Design and Permitting – Anticipated start/finish is Fall 2022/Spring 2023.
- Construction – Anticipated start/finish is Fall 2023/Spring 2024.

**Key Outcomes (Benefits to the IRL):**

The three key benefits of this project include water quality, education, and resiliency. This project has the potential to treat roughly 37 acres of vacant, multi-family, and single-family land-uses. This would result in approximately 98.36 lb/yr and 15.538 lb/yr of TN and TP removed, respectively.

City of Cocoa, Florida - Dixon Blvd at Indian River Drive Water Quality and Resiliency  
Indian River Lagoon National Estuary Program  
FY 2023 Proposal Application

## Section 1 – Title Page

**Project Title:** Dixon Blvd at Indian River Drive Water Quality and Resiliency Project

**Primary Applicant:** City of Cocoa – Owner

| <b>CCMP Alignment</b>                    |  |
|--|--|
| Water Quality - Impaired Waters          | <p>The Indian River Lagoon Basin is currently an impaired state water and this project is located within the North Indian River Lagoon Basin Management Action Plan.</p> <p>The incorporation of a second-generation baffle box will directly help to reduce the Total Nitrogen and Total Phosphorus loadings that are currently being introduced to the lagoon through direct discharge during rain events.</p>   |
| Water Quality – Stormwater               | <p>The baffle box is intended to treat a 19"x30" discharge pipe and also tie in existing flumes and discharge structures to this baffle box. This would potentially eliminate two or more direct discharges into the Indian River Lagoon. These treatment areas include single-family residential, multi-family residential, and commercial zoning areas.</p>  |
| Habitat Quality – Living Shorelines      | <p>The implementation of a living shoreline within the adjacent City of Cocoa-owned property and right-of-way will provide habitat and resiliency to this particular coastline. The resiliency will also help to protect the elevated roadway that is being proposed as part of this project. Note that the implementation of this will be subject to the final funding amount.</p>  |
| Healthy Communities – Trash-Free Waters  | <p>The baffle box will help to remove trash and debris before it enters the lagoon.</p>  |
| Living Resources – Climate Ready Estuary | <p>As part of this project, a portion of Indian River Drive and Dixon Blvd will be elevated. This roadway is anticipated to be elevated above the 100-year flood elevation and also take into consideration future sea-level rise to prevent reoccurring inundation of water over the roadway. This will help to reduce the flooding chances during tropical systems, which will help to prevent various petroleum-based chemicals and other debris from receding into the lagoon as water levels normalize.</p> |

City of Cocoa, Florida - Dixon Blvd at Indian River Drive Water Quality and Resiliency  
Indian River Lagoon National Estuary Program  
FY 2023 Proposal Application

|   |   |
|---|---|
| Communicate-Collaborate-Coordinate - Citizen Engagement and Education | The incorporation of an educational scenic outlook at the terminus of the Dixon Blvd R/W would provide an opportunity for bicyclists and pedestrians to physically view a living shoreline. A kiosk would also be implemented describing the benefits of this project and provide resources for the general public to learn more about the initiative to restore the Indian River Lagoon. |
|---|---|

## **Section 2 – Project Proposal Detail**

### **A. Project Overview**

This project is located in the City of Cocoa, Florida at the intersection of Dixon Blvd. and Indian River Drive. The City of Cocoa has three census tracts identified as Federal Opportunity Zones. The majority of the City of Cocoa has also been identified in five census tracts as a Hub Zone. The City also has an Enterprise Zone, established by the State of Florida. All of these zones encourage business development, expansion and job creation in economically distressed areas. The project encompasses five key components related to this particular land area that is directly adjacent to the Indian River Lagoon, which lies east of Indian River Drive. Elevating the roadway above the 100-year flood elevation will provide transportation resiliency to this roadway by reducing the likelihood of catastrophic flooding events due to storms and long-term sea-level rise. By incorporating a second-generation nutrient removal filtration system (Baffle Box), stormwater within this drainage area will be treated to remove Total Nitrogen, Total Phosphorus, and Total Suspended Solids by way of the media within the box. This reduction in nutrients will help decrease the contributions to harmful algae blooms. The reduction of TSS also helps to reduce turbidity, which in turn may allow more sunlight to reach the river bottom, enhancing the opportunity for sea-grass growth. The baffle box will also capture various debris and trash, providing for a healthier lagoon and associated animals using this estuary. The reduction in trash provides a strong emotional benefit to people as well. The incorporation of a scenic look-out with educational information not only educates but also engages many locals and visitors to this area. Indian River Drive is a scenic roadway that is traveled by bicyclists and pedestrians all over the country. In addition, the United States Bike Route 1 Realignment was recently approved to shift this national bike route from U.S. Highway 1 to Indian River Drive, which will further increase the visibility of this project. There is also another opportunity to include a living shoreline in this area as part of the project. Due to the multiple aspects of the project as listed above and consideration of funding, that may be included as part of the design pending the amount of available funding.

### **B. Quantify Project Outputs (Deliverables)**

There are three key project deliverables to this:

- a. Preliminary Design – This is currently underway and is being 100% funded by the City of Cocoa. This will help to define the future final design plan and is anticipated to be completed by the Spring of 2022.

City of Cocoa, Florida - Dixon Blvd at Indian River Drive Water Quality and Resiliency  
Indian River Lagoon National Estuary Program  
FY 2023 Proposal Application

- b. Final Design and Permitting – This is the portion that the project funding is being sought after with this application. The estimated cost of this phase is \$80,000, which is intended to have a 50% cost share between IRLNEP and the City of Cocoa. This design effort would begin in the Fall of 2022, with an anticipated completion date in the Spring of 2023. All Federal, State, and Local permits will be in place at the conclusion of this phase.
- c. Construction – Construction will be applied to as a separate future phase. It is not included at this time for a multi-year request due to the minimal information related to the actual construction costs of this project at this point in time. That coupled with current inflation, the City of Cocoa Staff felt it would be best to wait until costs are more clearly defined. The start date for this would be projected at Fall of 2023 and finish by Summer of 2024. The City of Cocoa also anticipates seeking additional funding sources for this project.

**C. Project Outcomes (benefits to the IRL)**

This project provides immediate benefits to water quality, stormwater, and education. Long-term benefits include increased education by way of the volume of people that would utilize the look-out. This also provides short, medium, and long-term resiliency to the roadway by helping to decrease the likelihood of flooding events that will inundate this section of Indian River Drive. By preventing the river from rising over the roadway, this also benefits the water quality since those nutrients and petroleum-derived nutrients would typically be washed into the river during those highwater events. The reduction in nutrients being introduced to the lagoon by this project will contribute to the overall goal of the NEP to improve water quality and decrease untreated stormwater runoff.

**D. Technical Merit / Justification**

The urgency is clear as it relates to the Indian River Lagoon. The latest report card through the Marine Resources Council indicates that water quality may be slightly improving but overall is still very poor. This specific region is one of the lowest scorings according to recent reports and implementing proven technology along with education is a key component to helping restore the lagoon. As previously mentioned, this project is located on one of the most popular scenic roadways in the County, with people from all over the Country traveling this corridor on bike and foot. The baffle box has the ability to provide high removal rates of contaminants and nutrients during each rain event. The scenic look-out will educate people on a daily basis to help spread the message that our lagoon needs help. This signage will show the benefits of this project and provide resources on how each person may get involved. The design will be completed within the timeframe allotted with every intention to stay within budget. If under budget, the design will seek to incorporate additional items, like a Living Shoreline near the scenic look-out.

**E. Partner and Local Commitment**

The City of Cocoa is part of the Indian River Lagoon Basin Management Action Plan and has a required Total Maximum Daily Load Requirement as part of that basin management action plan. The City of Cocoa also has a 10-year stormwater work plan and has recently revamped how the Stormwater

**City of Cocoa, Florida - Dixon Blvd at Indian River Drive Water Quality and Resiliency  
Indian River Lagoon National Estuary Program  
FY 2023 Proposal Application**

Utility, which is an enterprise fund, collects revenue. This project has the potential to address three projects within that plan under one effort. The City of Cocoa has been successful in creating regional stormwater systems, implementing LID technologies, and also has previous experience with Second-Generation NRFS and First-Generation Litter Removal Baffle Boxes.

**F. Project Readiness**

The preliminary engineering is currently underway and will be completed this Spring of 2022. The next phase will be final engineering and permitting, which is anticipated to commence in the Fall of 2022. That phase, which is what this proposal is seeking, will be completed by Spring of 2023. This will include final engineering plans and all Federal, State, and Local permits required for the work to be completed.

**G. Project Monitoring / Evaluation and Maintenance Plans**

The success of the roadway elevation project will be monitored by measuring the water levels during tropical systems against the roadway to determine the effectiveness of elevating the roadway. Maintenance will be performed on the Baffle Box per FDEP recommendations as part of the City of Cocoa's National Pollutant Discharge Elimination System Municipal Separate Storm Sewer System Permit. In addition, since this project will be added to the City of Cocoa's Basin Management Action Plan North Indian River Lagoon Project List, the annual nutrient removal rates will be reported as part of the FDEP Statewide Annual Report. The City of Cocoa will seek to include a QR type code on the signage to help determine the number of "hits" the link has. All maintenance will be performed by the City of Cocoa Stormwater Division.

**H. Project Sustainability**

The project may seek construction funding in the future, but not at this time. This is due to some of the uncertainty related to construction costs and the infancy of the preliminary design at this point. When the City of Cocoa has a shovel-ready project, multiple funding sources will likely be sought out, including from the IRLNEP.

**I. Citizen Engagement / Volunteers**

This project will not directly involve Citizens or volunteers in the actual implementation of the design or construction. However, the scenic lookout will engage citizens in the future and provide a clear message that they can share about this project and other efforts to help restore the Indian River Lagoon.

**J. Experience and Past Performance**

The City of Cocoa is very familiar with both first-generation and second-generation baffle boxes and has successfully implemented these projects in the past. The City of Cocoa has also worked through the Florida Department of Environmental Protection and Save Our Indian River Lagoon for a NRFS

**City of Cocoa, Florida - Dixon Blvd at Indian River Drive Water Quality and Resiliency  
Indian River Lagoon National Estuary Program  
FY 2023 Proposal Application**

baffle box on Church Street. In terms of water quality projects alone, the City of Cocoa has demonstrated the ability to conceptualize and successfully complete multiple LID, retrofit, and both Federal and State grant-funded projects. This project has not received any previous funding from sources other than the Stormwater Assessment Fee, through the Stormwater Division. The Church Street Baffle Box was completed within the last 5 years which included tying in a baffle box into an existing, untreated stormwater discharge into the Indian River Lagoon. The City has also implemented LID technologies with the implementation of pervious pavers as part of the Florida Avenue Streetscape project and construction of a new dry detention pond to help treat a previously untreated area. The City of Cocoa has also implemented mechanical harvesting techniques to remove vegetation from stormwater ponds. Floating wetlands have been installed in multiple stormwater ponds to help absorb nutrients and provide much-needed fish and wildlife habitat within these ponds.

### **Section 3: Project Funding**

#### **Partnership and Cost Sharing**

| <b>Summary Budget Table</b>      |             |                |
|----------------------------------|-------------|----------------|
| <b>Budget Category</b>           | <b>Cash</b> | <b>In-Kind</b> |
| Total Project Cost               | \$80,000    | N/A            |
| Funds Requested from IRL Council | \$40,000    | N/A            |
| Applicant Matching Funds         | \$40,000    | N/A            |
| % Match                          | 50%         | N/A            |

| <b>Detailed Project Budget Table</b> |                                   |                              |                                  |  |
|--------------------------------------|-----------------------------------|------------------------------|----------------------------------|--|
| <b>Task Line Item</b>                | <b>Deliverable</b>                | <b>IRLNEP Funding Amount</b> | <b>Cost Share Funding Amount</b> | <b>Source of Cost-Share Funding (Cash/In-kind)</b> |
| 1                                    | Preliminary Engineering           | 0                            | \$32,615.90                      | Cash   |
| 2                                    | Final Engineering and Permitting  | \$40,000                     | \$40,000                         | Cash   |
| 3                                    | Construction (Future Application) | TBD                          | TBD                              | Cash   |
|                                      | Summary Costs                     | \$40,000                     | \$72,615.90                      | Cash   |
|                                      | Total Project Costs               | \$112,615.90                 |                                  |  |