



AGENDA ITEM REQUEST FORM

Item No. 9e

Town Manager

Connie Hoffmann

Department Submitting Request

Dept Head's Signature

REGULAR
COMMISSION MTG
Meeting Dates - 7:00 PM

DEADLINE TO
Town Clerk

ROUNDTABLE
MEETING
Meeting Dates - 7:00 PM

DEADLINE TO
Town Clerk

- Nov 9, 2010
- Dec 7, 2010
- Jan 25, 2011
- Feb 22, 2011
- Mar 22, 2011

- Oct 29 (5:00 pm)
- Nov 30 (5:00 pm)
- Jan 14 (5:00 pm)
- Feb 11 (5:00 pm)
- Mar 11 (5:00 pm)

- Nov 22, 2010
- Dec 14, 2010
- Jan 11, 2011
- Feb 8, 2011
- Mar 8, 2011

- Nov 12 (5:00 pm)
- Dec 3 (5:00 pm)
- Dec 30 (5:00 pm)
- Jan 28 (5:00 pm)
- Feb 25 (5:00 pm)

*Subject to Change

- | | | | |
|---------------------------------------|---|---|---------------------------------------|
| <input type="checkbox"/> Presentation | <input type="checkbox"/> Reports | <input checked="" type="checkbox"/> Consent | <input type="checkbox"/> Ordinance |
| <input type="checkbox"/> Resolution | <input type="checkbox"/> Quasi Judicial | <input type="checkbox"/> Old Business | <input type="checkbox"/> New Business |

SUBJECT TITLE: Coastal Partnership Grant Application

EXPLANATION: The State is accepting grant applications under the Coastal Partnership Grant program for funding from July 1, 2011 - June 30, 2012. The Town's artificial coral reef project appears to be a good candidate for the grant program and we have prepared a grant application for funding in the amount of \$16,750 to assist the Town with the expense of: 1) performing the monitoring and reporting requirements of the permitting agencies on the reef project, 2) transplanting corals to the artificial reef in that one year time frame, 3) creating signage that will educate the public about the Town's coral reef, the artificial reef project, and the Town's snorkeling trail, 4) administering the reef project and the grant, and 5) publicizing the reef project. The Town must agree to match the grant with Town funds in the same amount. The funds for the match are available in the CIP.

RECOMMENDATION: Approve the Coastal Partnership grant application.

EXHIBITS: Grant Application

FISCAL IMPACT AND APPROPRIATION OF FUNDS:

- Amount \$16,750
- Acct # 300-576.127-500.630
- Transfer of funds required
- From Acct # _____

Reviewed by Town Attorney
 Yes No

Town Manager Initials CH

COASTAL PARTNERSHIP INITIATIVE

www.dep.state.fl.us/cmp/grants/index.htm

GRANT APPLICATION

Refer to Rule Chapter 62S-4, Florida Administrative Code, available at <http://www.dep.state.fl.us/cmp/grants/index.htm> for information on funding requirements and evaluation criteria.

Eligible applicants for the Coastal Partnership Initiative are local governments of the 35 coastal counties and all municipalities within their boundaries required to include a coastal element in the local comprehensive plan. Florida colleges, community colleges, state universities, regional planning councils, national estuary programs and non-profit groups may also apply, as long as an eligible local government agrees to participate as a partner.

Submittal Requirements

1. One application per applicant may be submitted per grant cycle (i.e., one application per county, city, or other eligible applicant.)
2. Applicants may request:
 - a) no more than \$30,000 and no less than \$10,000 for planning, design and coordination activities; and
 - b) no more than \$60,000 and no less than \$10,000 for construction projects, habitat restoration, invasive exotic plant removal, and land acquisition. These projects cannot involve planning/coordination tasks or components.
3. Non-profit groups are not eligible to receive funds for construction projects, invasive exotic plant removal, habitat restoration, or land acquisition. Applications submitted by non-profit groups that propose these activities (as listed in 62S-4.004(2)(c)) will be disqualified.
4. Funding is available only for project work initiated and completed during a 12-month period beginning July 1 and ending June 30.
5. One original, signed application must be submitted along with four copies of the application and one CD/DVD copy of the application.
6. All applications must be submitted on the CPI Application Form.
7. Applications must be submitted in person, by certified or registered mail or by courier service by 4:00 p.m. on the date identified in the notice of availability of funds to:

Department of Environmental Protection
Florida Coastal Management Program, MS 47
ATTN: CPI Applications
3900 Commonwealth Blvd., Tallahassee, FL 32399-3000

Faxed, electronic, or late applications will not be considered and will be disqualified.

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A. TITLE PAGE

Project Title: Artificial Reef Fish Habitat Monitoring, Maintenance and Promotion

CPI Initiative Priority Area(s): Coastal Resource Stewardship

Applicant Name and Name of Partner Entity (if applicable):

Town of Lauderdale -by- the- Sea

Official Contact Name: Constance Hoffmann

Title: Town Manager

Phone/Fax: 954-776-0576

Email Address: Connieh@lauderdalebythesea-fl.gov

Postal Address: 4501 Ocean Drive

Lauderdale-by-the-Sea, FL 33308

Applicant DUNS Number: 086380268

Proposed Project Manager Name: Constance Hoffmann Email: Connieh@lbts-fl.gov

Certification Statement

“By signing this title page, the undersigned certifies that:

- a. This application is in all respects fair and submitted in good faith without collusion or fraud;
- b. If selected through this application process, the recipient will work in good faith and in partnership with the Florida Coastal Management Program to manage its subgrant in a timely and accurate manner;
- c. Any funds awarded as a result of this application process will not be used to supplant or replace any state or local funds;
- d. Any funds awarded as a result of this application process will not be used as matching funds to apply for or receive other federal funds;
- e. No federal funds will be used as match for funds awarded as a result of this application process;
- f. The applicant local government’s adopted comprehensive plan has been found to be in compliance with Chapter 163, Part II, F.S.;
- g. [If construction is proposed] The applicant has conducted preliminary consultation with appropriate federal, state, regional and local regulatory agencies regarding any construction proposed in the application and has documented the results of the consultation in the Permitting Requirements section of the Work Plan;
- h. [If construction projects, habitat restoration or invasive species removal are proposed] The property on which these activities will take place is owned or leased by the applicant or the applicant holds a sufficient easement; and
- i. The undersigned has full authority to bind the applicant.”

	<u>Constance Hoffmann, Town Manager</u>	
Signature	Name & Title	Date

If applicant is a Florida college, community college, state university, regional planning council, national estuary program or non-profit group, include the signature, name, and title of contact for partnering entity; the name of the eligible county or city partner; and the date.

Signature of Partner	Name & Title	County or City Partner Entity	Date

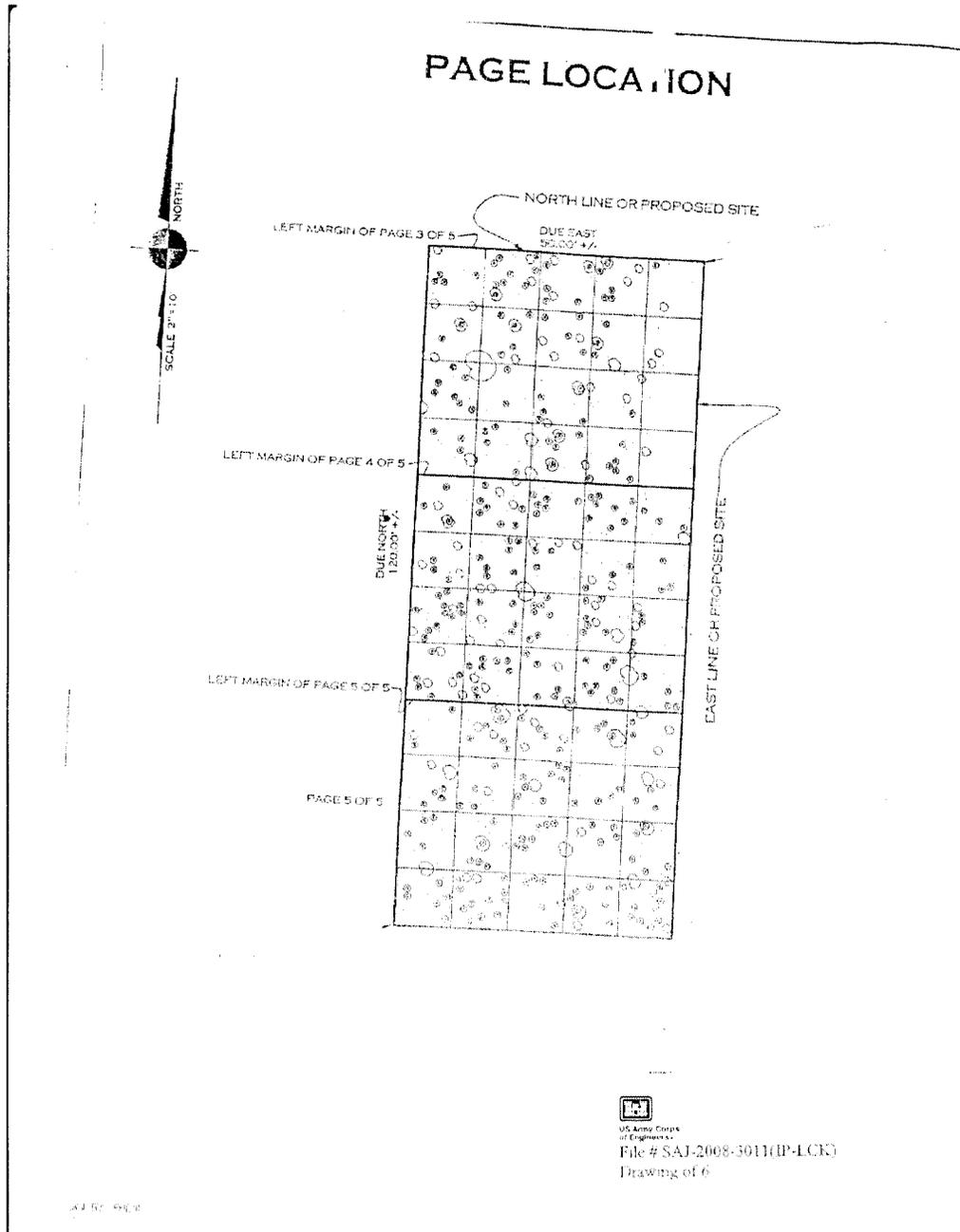
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B. PROJECT LOCATION MAP

Include a project location map no larger than 8½” x 11”.

(10 pts.)*

The project is located in the Atlantic Ocean approximately two blocks south of Lauderdale –by-the-Sea pier, directly south of the end of the pier (26.189194 degrees 80.092367 degrees), Broward County, Florida. The project area is 50 feet by 120 feet.



* NOTE: The maximum number of points for scored application components is indicated in each section.

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C. WORK PLAN (Expand text boxes as needed, keeping within the 10-page Work Plan limit)

This section describes the project and cannot exceed 10 single sided pages or 5 double sided pages. If letters of support or other materials are submitted to address the Work Plan components below, these items will count toward the maximum 10 pages of the application Work Plan; any additional pages or Appendices will be discarded and not considered in the evaluation of the application. The Title Page, Location Map, Budget and Budget Narrative do not count toward the 10-page limit of the Work Plan.

1. PROJECT DESCRIPTION.

a. Describe in detail the activity or work to be conducted; include project location information. **(15 pts.)**

Lauderdale-by-the-Sea has contracted to have an artificial reef constructed using Biorock technology. The project is located in the Atlantic Ocean approximately two blocks south of the Lauderdale –by-the-Sea pier, directly south of the end of the pier (26.189194 degrees 80.092367 degrees), Broward County, Florida. The project area is 50 feet by 120 feet. The deployment of the artificial reef will be comprised of 6 underwater rebar structures powered by solar power mounted buoys attached to an anode, secured to the hard bottom. The purpose of the artificial reef is to develop a coral reef and fish habitat utilizing Biorock technology which is purported to grow corals faster and more resistant to environmental stresses by using low voltage direct current. The electric current causes solid limestone rock to form over steel structures, which is conducive to growing coral.

One of the Coastal Partnership Initiatives Goal is to promote stewardship and appreciation of fragile coastal resources through local government involvement. Lauderdale-by-the-Sea is one of the few locations in the United States where people can swim to a coral reef from the shoreline and the Town is deeply committed to preserving, protecting and enhancing the fragile coral reef habitat for the benefit of current residents and visitors and for generations of residents and visitors to come. Through Lauderdale-by-the-Sea's leadership, a technology which has been used elsewhere in the world (including in the Caribbean), but never deployed in the United States, will be used to generate a new coral reef. It is the Town's hope that this project will be a model for future projects along the Florida coast and elsewhere as our reef systems become endangered due to environmental and human stresses.

Lauderdale-by-the-Sea has already obtained permits from the Florida Department of Environmental Protection, the U.S. Army Corps of Engineers, and the U.S. Coast Guard and was granted an Environmental Resource License from Broward County to install the artificial reef project. The Town is required to submit comprehensive monthly monitoring reports on the project to Broward County, the U.S. Army Corps of Engineers, Jacksonville, FL and NOAA in Silver Springs, MD in the first year of installation, and quarterly monitoring reports in the second year of installation. All components of the project have been constructed and the Town is prepared to install the artificial reef system on the sea floor in the winter of 2011.

Coastal Initiatives grant funding is being requested for post-installation work required to monitor the project and prepare the monitoring reports to the permitting agencies beginning July 1, 2011 and ending June 30, 2012; for interpretive signage to inform the public of the placement, purpose and growth of the artificial reef project and the coral reef habitat that exists just offshore; for the transplantation of corals to the reef; for grant administration; and for promotional activities to make the general public aware of the benefits of the project.

1. The Biological and Physical Monitoring Plan for the Biorock Artificial Reef is designed to document the performance of the structure in the near shore coral reef environment of Lauderdale-by-the-Sea. The Town will document physical characteristics of the structure for stability and the solar panels, cables, and buoy lines for corrosion and durability. We will also record and measure biological characteristics of the reef structures such as recruitment rates, colonization, growth, and survival of hard and soft corals, sponges, and algae, along with fish populations. Biological monitoring results will be compared to several control sites established nearby. The permits require written, photographic and video evidence of the impact of the

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installation of the artificial reef on the existing habitat and to document growth rates of coral.

2. Interpretive Signage – The Town wishes to educate the public about Lauderdale-by-the-Sea’s commitment to improving the quality of the coastal waters and sea life through the deployment of the Biorock artificial reef and to create a sense of ownership for those who swim, snorkel, scuba dive and fish in the waters off Lauderdale by the Sea. Interpretive signage will be instrumental to the priority area of promoting coastal stewardship by creating a visual display of the fragile underwater ecosystem, the threats which exist to it, and the solar-powered Biorock reef project which will create a new, healthy fish and coral habitat. The signage will create a public message of the importance of coastal stewardship, while generating excitement about what is taking place just a few feet under the water.

3. Transplantation of corals to the reef – Once deployed, the Biorock reef is expected to generate a substrate within months of installation which will be conducive to transplanting rescued broken pieces of hard and soft coral. The transplantation and subsequent regeneration of the coral which will be done by a licensed contractor will increase the rate at which the reef becomes a viable healthy underwater habitat and speed the growth of coral. Visitors and residents alike will be able to observe the steady growth of coral life on the structure.

4. Promotional Activities- The Town will generate interest in and create exposure for the Biorock reef project through various means which may include articles on the website and in the town quarterly newsletter, video on the town’s cable channel, event booths, videos, flyers and media support to report regular updates and progress as it occurs.

5. Grant Administration-The grant administrator will oversee the work of contractors who will dive the project in order to do the monitoring activities, review their written and photographic evidence, and ensure accurate and timely reporting and completion of grant activities.

Describe specific project objectives, tasks, and deliverables and related timelines for each. Objectives and tasks should clearly relate to the project description.

(20 pts.)

1. **The Biological and Physical Monitoring Plan** for the Biorock Artificial Reef is designed to document the performance of the structure in the near shore coral reef environment of Lauderdale-by-the-Sea. The plan calls for documentation of physical characteristics of the structural stability, and the solar panels, cables, and buoy lines for corrosion and durability. The monitoring plan requires that we record the biological criteria of the reef structures such as recruitment rates and biological characteristics such as colonization, growth, and survival of hard and soft corals, sponges, and algae, along with fish populations. Biological monitoring results will be compared to control sites.

Monitoring will be conducted and reported monthly during the first year after installation of the project and then quarterly in the second year. The monitoring will consist of the following activities:

a. **Physical Monitoring** – During each reporting period, teams equipped with SCUBA equipment will visually inspect and video each structure. Monitoring at each structure will include color video photography, close inspection of physical and electrical connections, observations of general conditions and stability, and recording of the thickness of the mineral growth on the structures with calipers. Observations will be made to see if there is any sand accumulation or scour in the vicinity of the structures.

b. **Biologic Monitoring** – Video records of all visible organisms on the structures will be archived to document time changes. All spontaneously recruiting hard corals, soft corals, sponges and bivalves will be recorded and their growth and survival, as well as recruitment rates documented using photographs with a scale. Algae species and abundance will also be documented from images. Similar measurements will be made on control sites. Data from reef and control sites will be compared using standard statistical tests.

c. **Buoy Monitoring** – During each survey, teams equipped with SCUBA equipment will inspect each buoy anchor line. Visual inspection will include observations of general conditions, condition of anchor lines, fouling, condition of anchor bolts, connection to buoy and the entire length of the cables. Solar panels and buoy conditions will also be inspected.

d. **Video Documentation** – Video photography will document each structure from above, both sides and the ends of each structure. High resolutions digital video imagery that allows frame-grabbing analysis will be used during each monitoring event. These frames will be archived to document any changes in general

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conditions, mineral growth, and identifying any benthic organisms that have recruited to the structure.

e. **Fish Counts** – Fish counts will be conducted on both groups of structures and similar measurements will be made at control sites.

f. **Study Sites**- The structure site is located at an approximate depth of 14 feet. Adjacent areas of hard bottom will be chosen as reference sites to be used as control sites for monitoring the progress of the project area.

Analysis Method- Recruitment, growth, and survival rates of sessile populations and of fish counts on Biorock reefs will be compared to those on control sites using standard statistical tests to determine whether or not they represent different sample populations.

2. The **interpretative signage** will be designed and constructed between September 2011 and January 2012 and installed by May 2012. The objective of the signage is to educate the public about the forces that endanger Florida’s coral reefs, the Town’s efforts to utilize a new technology supported by solar energy to create a new reef habitat, the species of coral, vegetation and fish life on the existing reef, information on the underwater snorkeling trail that guides snorkelers over highlights of the Town’s reef, and to caution readers to avoid behaviors that can harm the reef. The sign will increase public awareness of the remarkable reef that exists so close to shore, of the fragility of the coral reefs and their endangered status, of the State of Florida’s and the Town of Lauderdale by the Sea’s commitment to protect and nourish this vital natural resource, and of the need for every member of the public to become custodians of the reef and its attendant sea life.

3. An important element of this project is the **transference of corals** to the artificial reef. Biorock reefs are designed to create an environmentally suitable substrate for coral replacement. This substrate typically occurs within a few months of installation of the artificial reef structure, at which point the contractor will be permitted to rescue nearby naturally-broken hard and soft corals and attach them to the artificial reef. On every structure, all visible hard and soft corals will be photographed with a scale, so that spontaneous recruitment, growth, and survival rates can be computed as well as growth and survival of any transplants.

4. **Promotional Activities** – The Town will create a campaign to bring attention and generate excitement about the Biorock reef project which will engage the public in coordination with town events, website exposure, quarterly updates in the town paper, informational flyers and media attention. As good stewards of the coastal waters, the Town is committed to involving its residents in volunteer efforts which are already evident in their oversight of the beaches, turtles and other activities.

5. **Grant Administration** – The grant administrator will monitor the contractor’s work, ensuring accurate, timely reporting and completion of grant activities.

2. PROJECT NEED AND BENEFIT.

a. Explain the demonstrated need, which the project addresses. **(25 pts.)**

Coral reefs worldwide are in decline. Impacts include but are not limited to coastal development, silting caused by beach re-nourishment projects, increased nutrient load and sedimentation due to runoff, dredging activities, cable drags, anchor damage, bleaching, diseases, boring organisms, carbon dioxide build-up in the atmosphere and ship groundings. Lauderdale –by- the- Sea is taking a pro-active approach to enhance and restoring the coral reef and fish habitat in our waters through the installation of the Biorock reef. This project, though on a small scale, is a very visible demonstration of man’s ability to reverse the detrimental effects we have had on our reefs. By creating healthy coral reefs, an entire underwater ecosystem is positively affected. Utilizing solar energy in this project highlights the use of a renewable energy source to regenerate coral reefs here, and elsewhere in the future.

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b. Explain how the proposed project meets the purpose of at least one CPI priority area. (10 pts.)

This project meets the CPI priority of Coastal Resource Stewardship. Through the installation of a Biorock artificial reef, Lauderdale- by- the- Sea is committed to preserving its coastal waterway and creating a healthy habitat for corals and fish to thrive. Utilizing funding to maintain and monitor the project (as required from the permitting agencies), increase coral growth, and provide the public with information about the reef project promotes the need to dedicate resources to restoring a stressed ecosystem. It also highlight's one community's commitment to using a renewable energy source as an important facet of the project which will promote a greener, healthier environment for all.

c. Discuss the extent to which the project will improve the management and protection of coastal resources. (25 pts.)

Following best practices for the management and protection of the artificial reef project, Lauderdale –by- the- Sea will be able to timely adjust to any changing conditions as well as promote and expand the CPI goal of coastal stewardship. The proposed Biorock reef fits into Florida Strategic Artificial Reef Plan's guiding principles by supporting the use of innovative technologies for coral reef restoration. Fostering coral growth through a new technology will expand wild fish habitats, demonstrate the viability of a new, inexpensive reef regeneration process while relying on renewable energy, strengthen the underwater ecosystem and educate the public about the value of our coral reefs. The success of this project may very well be just the beginning of reef regeneration all along the coastlines.

d. Discuss how project is feasible and can be completed within one year. (10 Pts.)

The artificial reef has been fully permitted and funded for deployment. The solar buoys have been constructed, as have the artificial reef structure. Deployment of the project will occur before the grant year begins, so the Town can put the grant funds to use immediately to monitor and maintain the installation during a very critical period for corals to generate and grow on the project. Monitoring reports required by the Army Corps of Engineers, NOAA and Broward County; interpretational signage and coral transplantation all have timelines which can be completed within the time period of July 1, 2011 to June 30, 2012. This is a very important, progressive project which has been well-planned, is long awaited and the results of which are eagerly anticipated.

BUDGET and BUDGET NARRATIVE (15 Pts.)

Type dollar amounts only in applicable categories (round to nearest dollar; no cents) and leave other categories blank. A recipient will be required to provide 100% (1:1) matching funds, cash or in-kind. No more than one-half (50%) of match can be provided by a third party.

<u>Budget Category</u>	<u>FCMP Funds</u>	<u>MATCH Funds</u>
1. Salaries	_____	\$ 3,000.00
2. Fringe Benefits	_____	_____
3. Travel	_____	_____

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4. Equipment	_____	_____
5. Supplies	_____	_____
6. Contractual Services	<u>\$16,750.00</u>	<u>\$11,750.00</u>
7. Other Expenses	_____	<u>\$ 2,000.00</u>
8. Indirect Charges	_____	_____
FCMP Total	<u>\$16,750.00</u>	
Match Total		<u>\$16,750.00</u>
Total FCMP & Match Funds	<u>\$33,500.00</u>	

If budget exceeds the amount shown on the "Total" line above, indicate the total project cost: \$ _____

BUDGET NARRATIVE: Describe line items for each applicable budget category shown above. Provide sufficient detail to show cost relationship to project activities for both FCMP and match items. **Indirect costs are not allowed as match.**

Total FCMP Funds Requested **\$16,750.00**

Salaries:

Equipment:

Supplies:

Contractual Services: **\$16,750.00**

\$12,250.00 – The Biological and Physical Monitoring Plan for the Biorock Artificial Reef is designed to document the performance of the structure in the near shore coral reef environment of Lauderdale-by-the-Sea. The plan will document physical characteristics of the structural stability, and the solar panels, cables, and buoy lines for corrosion and durability. The monitoring plan will also record the biological criteria of the reef structures such as recruitment rates and biological characteristics such as colonization, growth, and survival of hard and soft corals, sponges, and algae, along with fish populations. Biological monitoring results will be compared to control sites.

Monitoring will be conducted and reported monthly during the first year of the project and then quarterly. The monitoring will consist of the following activities:

a. **Physical Monitoring** – During each survey, teams equipped with SCUBA equipment will visually inspect and video each structure. Monitoring at each structure will include color video photography, close inspection of physical and electrical connections, observations of general conditions and stability, and recording of the thickness of the mineral growth on the structures with calipers. Observations will be made to see if there is any sand accumulation or scour in the vicinity of the structures.

b. **Biologic Monitoring** – Video records of all visible organisms on the structures will be archived to document time changes. All spontaneously recruiting hard corals, soft corals, sponges and bivalves will be recorded and their growth and survival, as well as recruitment rates documented using photographs with a scale. Algae species and abundance will also be documented from images. Similar measurements will be made on control sites. Data from reef and control sites will be compared using standard statistical tests.

c. **Buoy Monitoring** – During each survey, teams equipped with SCUBA equipment will inspect each

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buoy anchor line. Visual inspection will include observations of general conditions, condition of anchor lines, fouling, condition of anchor bolts, connection to buoy and the entire length of the cables. Solar panels and buoy conditions will also be inspected.

d. **Video Documentation** –Video photography will document each structure from above, both sides and the ends of each structure. High resolutions digital video imagery that allows frame-grabbing analysis will be used during each monitoring event. These frames will be archived to document any changes in general conditions, mineral growth, and identifying any benthic organisms that have recruited to the structure.

e. **Fish Counts** – Fish counts will be conducted on both groups of structures and similar measurements will be made at control sites.

f. **Study Sites**- The structure site is located at an approximate depth of 14 feet. Adjacent areas of hard bottom will be chosen as reference sites to be used as controls for monitoring the progress of the project area.

Analysis Method- Recruitment, growth, and survival rates of sessile populations and of fish counts on Biorock reefs will be compared to those on control sites using standard statistical tests to determine whether or not they represent different sample populations.

\$2,500.00 – Interpretative Signage to promote sustainable stewardship of the coastal waters through the deployment of an artificial reef.

\$2,000.00 - @\$75/hr for the transplantation of corals to the artificial reef.

Other Expenses:

Indirect Charges:

Total Match Funds: **\$16,750.00**

Salaries: **\$3,000.00** – Grant Administration, monitoring contractor’s work, and communicating with permitting agencies @\$40 hour

Fringe Benefits:

Travel:

Equipment:

Supplies:

Contractual Services: \$16,750.00

\$7,250.00 – The Biological and Physical Monitoring Plan for the Biorock Artificial Reef is designed to document the performance of the structure in the near shore coral reef environment of Lauderdale-by-the-Sea. The plan will document physical characteristics of the structural stability, and the solar panels, cables, and buoy lines for corrosion and durability. The monitoring plan will also record the biological criteria of the reef structures such as recruitment rates and biological characteristics such as colonization, growth, and survival of hard and soft corals, sponges, and algae, along with fish populations. Biological monitoring results will be compared to control sites.

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\$2,500.00 – Interpretative Signage to promote sustainable stewardship of the coastal waters through the deployment of an artificial reef.

\$2,000.00 - @\$75/hr for the transplantation of corals to the artificial reef.

Other Expenses: \$2,000.00 – Promotional activities which may include but not be limited to exposure on town website, quarterly updates in the Town newsletter, a campaign to generate public interest, flyers, booths at Town events and media updates.

NOTE: Project costs will be evaluated for reasonability, and the application is eligible for up to 10 points based on the evaluation of costs.