Maritime Industry and Coastal Construction Impacts Response Document April 2016

***For context on this document, please see meeting minutes from April 2016.**

Title:

N-113: Eliminate Lake Worth inlet port Expansion project to reduce siltation on coral reefs and keep coastal communities and habitat in balance.

Background:

- This recommended management action relates to Palm Beach County and all relevant habitats within the Lake Worth Lagoon.
- This recommended management action is being put forth due to the proposed Lake Worth Inlet and turning basin dredging (expansion) project and its high potential for negative impacts on the environment and the community. This recommended management action aims to address the bigger issue of a large-scale economic development project that outweighs the environment's health. Recent port expansion projects have resulted in extreme and unanticipated environmental impacts. There is a need to adequately document estuarine resources which may not have been accurately inventoried when the project was initially proposed.

Objective:

- The intended outcome of this action is the preservation of existing habitat and community (below and above the water) including estuarine and ocean resources and the reduction in siltation of existing habitat in the Intercoastal Waterway. This recommended management action applies to a proposed United States Army Corps of Engineers (USACE) project but not maintenance dredging activities.

Intended Benefits and/or Potential Adverse Effects:

- Benefits with implementation of this recommended management action would include: (1) increased protection of resources, estuarine and ocean, that have the potential to be impacted by port/inlet modification projects, (2) maintaining the beauty and enjoyment of the area, including the areas around Peanut Island, and (3) protection of nearby resources that also have economic value to the community especially through tourism and boating in the area.
- The anticipated negative environmental impacts include: (1) the threat to seagrass beds by completely removing them, (2) destruction of the Blue Heron bridge diving area, (3) the inlet will be unsafe to smaller craft vessels (boats and kayakers) due to larger ships accessing the inlet, and (4) destruction to the beaches and coral reefs located to the north and south of the inlet.
- Some anticipated potential negative social and economic impacts the recommended management action may have include: (1) the money to run this project and the only benefit will go to the shipping industry not the Town or the County of Palm Beach and (2) a new cruise ship which occupies one of the Port slips may require the expansion to facilitate ingress and egress.
- The duration of the benefits of this recommended management action are long term.
- If this recommended management action were not to be implemented there will be a loss of existing important resources (corals, coral habitat, hardbottom, seagrass, etc.) and a loss of the economic benefits these resources provide for this area. The community that currently enjoy this area for ecotourism, recreation, water-sports, family-time, etc. could be diminished significantly.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection, United States Environmental Protection Agency, and the USACE.
- Other potential agencies or organizations who could be involved include the United States Fish and Wildlife Service, National Marine Fisheries Service, non-governmental organizations, and Palm Beach County.
- The key stakeholders for this recommended management action would be the resource users (e.g. divers, fishermen, and those with ecotourism interests). However, the shipping and coastal construction industries, including the Port of Palm Beach, are anticipated to not support this action.
- A potential challenge to getting this recommended management action implemented is: corporations that are funding the expansion project have a lot of monetary backing to see the project go through.
- There were no listed legislative considerations for this recommended management action.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements with this recommended management action.
- A way to provide a means to measure the success of this recommended management action would be the halt of the project or deauthorization of the port expansion.

Cost:

- The estimated direct cost of implementing this recommended management action is a onetime cost of less than $10,000 to initiate some conversations and/or produce some materials to educate the community on why this project should not go forward.
- A potential funding source can be acquired through the residents of Palm Beach that have the funding available and want to protect their property value or value of places to recreate.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.
- A portion of the community working group believes that the timeline for Our Florida Reefs (OFR) will not be timely enough to have an effective action that will actually effectuate change to the project, but would like to keep it an open recommended management action in the event the timelines get pushed back or there is a community effort to stop the project. In this fashion the record will reflect that the OFR process had recommended that the expansion not occur.

Miscellaneous Info:

- This recommended management action is not linked with any other recommended management action.
- Uncertainties or information gaps with this recommended management action include that the methodology for predicating, monitoring and evaluating the outcome from a port expansion project has proven inadequate based on what has happened at the first port expansion project.
- Supporting and relevant data was not identified within the recommended management action.
- Currently the USACE has not granted the permit, but it's under review and Palm Beach County's Artificial Reef and Estuarine Enhancement Committee has submitted a letter to the Corps of Engineers recommending that the proposed project by removed from consideration. This project has not been appropriated yet, while it is still feasible. If congress never funds it, then it will not move forward. Congress has de-authorized a lot of port expansion projects in this last Water

Resources and Development Act, and the USACE was given time to de-authorize it. To get authorization there needs to be congressional support, so if the project doesn't get the funding from the feds or from the county the expansion will not move forward.

- Need better publicized information and public forms to discuss these projects.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal C3 Obj. 4 / FL Priorities Goal C4 Obj. 3.
- SEFCRI LAS MICCI Issue 1 Goal Obj. 2 / SEFCRI LAS MICCI Issue 1: Obj. 1: Project 3; Obj. 3 / SEFCRI LAS MICCI Issue 2: Obj. 1.

N-113 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Eliminate Lake Worth inlet port expansion project to reduce siltation on coral reefs and keep coastal communities and habitat in balance.

Quick Stats:

- Total number of comments on this RMA = 9
- Support from WPB fishing club but mentioned could be duplicative.
    - CWGs felt as a group that the issues within this letter were not specifically being addressed. They stated that throughout the OFR process, they have taken measures to not include recommendations that are in regard to efforts that are already ongoing.
- Called out in Marine Industries Association of Palm Beach County letter because there is already a responsible agency to enforce that USACE not negatively affecting water quality during dredging.
    - CWG says DEP is not responsible to monitor water quality, rather the Dept. requires the permittee to monitor. CWG wants to clarify that this RMA is in reference to expansion and not maintenance of inlet. When avoidance is not possible, minimization is required, but it is unknown how adequately minimization/mitigation can be accomplished for this specific project.
- Called out in Mike Kennedy letter because already being addressed
    - The ACOE put in an application, didn't have enough info. This is a federally authorized project, but do not have even a conceptual permit. Some local opposition. CWGs contend that just because it has been authorized does not mean it will be completed. DEP has not yet issued a permit for the project.

Long Responses:

1. **"What do you support, or how could this RMA be changed to an action you could support?":**

Category	Comment	Ref #	CWG response
Support	Please do not continue with the port expansion if we have learned anything from the past mistakes of others. Lakeport Lagoon and it's marine organisms are only just recovering from past development impacts. We are finally at a point where Seagrass beds are starting to come back, and we are starting to see more corals within the lagoon. What is the point of putting money into environment tal restoration if we only plan to destroy it again? Please do not expand the port.	652	Reviewed-No Action
Support	and eliminate port everglades port expansion	221	support
Oppose	focus on sewer outfalls and sugar/cattle phosphate pollution reduction	246	Off topic - LBSP
Other	It seems that if permits are being issued, the issuing agency should be able to verify compliance. I don't think FDEP necessarily needs to have a dive team in order to accomplish this goal. A contracted third party could quite possibly accomplish the same matter.	1194	This comment references N-114 – 1. DEP is an issuing agency 2. Agree that an independent 3rd party contracter could also verify compliance

2. **"Other comments or input":**

Category	Comment	Ref #	CWG response
Support	ALL Port expansion	346	
Other	Port Everglades Response to Draft Recommended Management Actions (RMAs) March 1, 2016 Draft Recommended Management Actions (RMAs) have been developed by Community Working Group members within the below-listed areas of focus. • Education and Outreach • Enforcement • Fishing, Diving, Boating & Other Uses/Restoration • Land Based Sources of Pollution • Maritime Industry & Coastal Construction • Place-Based Draft Management Strategy (Areas of Interest) Several outreach meetings were held to discuss the future of	1283	**This comment references N-146**

	Florida's coral reefs. Broward County Port Everglades reviewed the RMAs and offer comments based specifically on the Maritime Industry and Coastal Construction and Place-Based Draft Management Strategy sections. For the Place-Based Draft Management Strategy (Areas of Interest), our understanding is this recommended management action is being put forth because there are user conflicts, unsustainable uses of the resource, direct impacts to reefs from ships, boats, debris, anchors, disruptions to spawning aggregations, and the continued documentation of degradation to the reef ecosystem. With respect to the Place-Based Draft Management Strategy (Areas of Interest,N-146) the working group is recommending establishment and implementation of a Marine Protected Area (MPA) zoning framework for the Our Florida Reefs (Southeast Florida Coral Reef Initiative – SEFCRI) region of interest that includes but is not limited to no-take reserves, no anchor areas, restoration areas, and seasonal protection for spawning aggregations to enable sustainable use, reduce user conflict, and improve coral reef ecosystem condition. As part of the placed-based process, our understanding is the working group reviewed where the Big Corals are located and the existing and proposed coastal constructions which resulted in the areas of interest and objectives. With regards to the MPA zoning the intended outcome of this action is to create a zoning framework that encourages ecosystem productivity, improves ecosystem function, reduces extractive uses, conserves existing habitat and surrounding habitat, and protection and replenishment of the reef ecosystem (sustainable use). Please be advised that a few of the working group's recommended actions are currently being addressed by different governmental agencies. We, however, concur that appropriate mitigation based on potential impacts to coral/hard bottom reefs should be mitigated. Thank you		
Other	I would like more publicized information about port expansion plans and when public forums will be held.	652	integrated

Not modified

Title:

N-117: Improve impact minimization and mitigation activities for unavoidable impacts to resources to reduce and offset lost ecosystem function; including the use of non-traditional mitigation strategies.

Background:

- This recommended management action relates to reef resources statewide.
- This recommended management action is being put forth because the current state statute requires that mitigation replace 100 percent of lost ecosystem function. However, current mitigation practices (boulders) do not recruit like natural reefs nor do they recruit within the monitoring time period. Applications for coastal construction permits frequently include proposals to construct artificial reefs using limestone boulders as compensation for impacts to reef. In instances dealing with a temporary loss or a partial (functional) loss, the use of alternative mitigation strategies may be more appropriate to offset project-related impacts to resources. In some cases, alternative mitigation strategies may also be appropriate to offset permanent or direct impacts. Alternative mitigation strategies would be those that may not directly replace lost ecosystem services but would improve the overall health of the system such as improved water quality. Alternative mitigation strategies may be appropriate where the amount of mitigation required is not feasible. This is not to include the use of mitigation banks.
- Coastal construction projects are required to minimize impacts, but more can be done to minimize potential impacts. In some cases, organisms that could be transplanted elsewhere are left within the impact area and are lost due to construction activities. It would be cost prohibitive to require all benthic organisms to be relocated prior to each coastal construction project. Benthic organisms do not always survive transplantation, and the long-term survivorship of organisms after transplantation cannot be guaranteed. However, in situations where a construction activity will result in total mortality of all organisms remaining within the project footprint, transplantation will substantially increase survivorship relative to the no-action scenario.
- Avoidance over minimization is paramount, which is consistent with DEP strategy.

Objective:

- One intended outcome of this action is to further avoid and minimize permitted impacts to natural resources due to coastal construction projects. Another objective is to expand and improve mitigation practices where avoidance is not possible. In particular, mandating the relocation of a higher number and diversity of viable benthic organisms (e.g. corals, octocorals, and sponges) from areas of impact and improving the mitigation process (inclusive of permitting, implementation/construction, monitoring and compliance) would better ensure the success of mitigation projects. Additionally, for unavoidable impacts, non-traditional mitigation strategies like outplanting nursery organisms (echinoderms, corals, etc.), hazard removal, and water quality improvements should be encouraged.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation include greater minimization of impacts and improved success of mitigation projects which may result in "no net loss of corals" and may achieve a loftier goal of reducing and replacing the loss of ecological functions (not just coral mortality) resulting from permitted and unpermitted impacts to hardbottom and coral reefs.
- There will be a reduction in the mortality of benthic organisms within impacted areas. Salvaging organisms from impact areas can improve populations by maintaining genetic diversity and the number of reproductive individuals. Also, transplantation of corals within the project footprint will supply more fragments for coral nurseries, which can be used to repair injury sites. If a permittee ensures that all permit-required transplantation efforts are completed, but is unable to salvage all benthic organisms suitable for transplantation, then it may be advisable to allow trained volunteers to transplant additional organisms prior to construction.
- Corals (and other organisms e.g. octocorals and sponges) transplanted onto bare substrates (e.g., artificial reefs or damaged/barren natural reefs) can also enhance the recruitment (directly or via chemical attraction of larvae) in the areas of transplantation. Reef fish will also be attracted by more complex micro-relief of benthic organisms, which provide them shelter. It is important that more corals, octocorals, and sponges are removed from the area of impact and used to more aptly replicate the lost ecosystem services and function. Therefore, projects should require the removal of hard corals 10 cm and greater, and the transplantation of octocorals and large sponges (X. muta). For smaller footprint projects, the size requirement may be lowered. If larger benthic organisms (e.g., corals) have higher survivorship, then requiring smaller size classes to be transplanted from impact areas may reduce survivorship of transplanted individuals. It is important to consider that while the proportion of transplanted individuals that survive may be lower than previous projects, the overall number of individuals salvaged from impact areas will be greater.
- Alternative mitigation strategies, such as the transplantation of corals-of-opportunity and nursery-raised corals to unpermitted damaged natural reef sites, can restore the ecological functions of natural hardbottom and reef areas. However, nursery grown corals may hide the black market and would need to be restricted to only be used in mitigation. Currently, nurseries are limited in species reared and size classes offered. Therefore, that industry will need to be developed in order to handle the demand that large-scale projects would generate.
- The financial cost of alternative mitigation and the relative functional gain associated with mitigation activities will need to be compared to boulder reef creation on a project-by-project basis. In some cases, alternative mitigation activities may not be as cost effective as traditional mitigation (e.g., the construction of boulder reefs). Also, there may be increased costs associated with the removal and transplantation of additional benthic organisms from impact areas. Transplantation requires a substantial time commitment to locate organisms, assess their condition (e.g., free from disease), collect, and relocate. It is also necessary to identify suitable transplantation sites for relocated organisms and to prepare the substrate for transplants. Therefore, requiring additional transplantation (e.g., different types of benthic organisms or greater size range of organisms) from impact areas may be cost prohibitive in some circumstances. Potential financial impacts of employing alternative mitigation strategies are expected to be short-term, as methodology and

technology improve, the implementation of alternative mitigation is expected to become less expensive. Any additional costs for minimization via transplantation of benthic organisms from the impact area would be incurred on a project-by-project basis, but overall costs are expected to be short-term.

- A potential negative environmental impact would be the risk of transmitting diseases by transplanting nursery raised corals to natural sites. To minimize the potential transmission of disease, it is typically recommended that organisms with visible signs of disease not be transplanted.
- This recommended management action will be a recurring activity because coastal development, and by extension the maintenance of coastal developments, is ongoing and the best suited minimization or mitigation method will need to be determined on a project by project basis. Similarly, the permitting process, as well as developing alternative mitigation methods, for mitigation projects should be continually adapted and improved upon based on lessons-learned.
- If this recommended management action were not implemented, then ecosystem function will not be replaced 100 percent and therefore lost. There will continue to be a loss in the natural range of population age and size class structure. This can result in economic and social losses due to lack of resources for public users, including divers and fisherman.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection (FDEP).
- Other potential agencies or organizations who could be involved include the United States Army Corps of Engineers (USACE), Florida Fish and Wildlife, National Oceanic and Atmospheric Administration, and the National Marine Fisheries Service.
- The key stakeholders for this recommended management action would be coastal construction entities including permittees and regulatory agencies, as well as organizations with expertise in mitigation reefs, nurseries, and transplantation.
- This regulation does not conflict with any laws or regulations. State laws currently require minimization and mitigation for unavoidable impacts to resources. This recommended management action would provide applicants additional options for mitigation.

Permitting/ Enforcement Requirements of RMA:

- There are no permits required to implement this recommendation. However, requirements in permits should include that the removal of organisms to be transplanted is a minimization effort and could be counted on the front end of assessment equations and would not also count on the backend of the mitigation equation.
- There are no enforcement requirements with this recommended management action.
- A measurable way to show success with this recommended management action is through counting the number of projects using alternative mitigation. The status/success of specific projects using alternative mitigation methods can be quantified using the number of transplanted organisms, their growth and survival. Also, the number of organisms salvaged from impacted areas and their survival post-transplantation could be measured. The success of mitigation is defined as the replacement of ecological functions provided by natural resources/communities that were lost or degraded due to anthropogenic impacts.

Cost:

- Promotion of alternative mitigation by regulatory agencies will not require a substantial amount of money. There will be one-time cost to develop and implement new mitigation standards.
- Potential funding for the start-up would come from the FDEP and possibly USACE Research Division, but permittees would be responsible for funding the minimization and mitigation activities.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- Some uncertainties or gaps with this recommended management action include:
    - Additional studies on the methods for transplanting corals could improve protocols and best practices.
    - Best management practices for minimization (i.e., removing and transplanting organisms) will need to be developed; specifically, information on the appropriate size and types of taxa that are to be removed should be refined – this is currently being addressed by Florida Fish and Wildlife Conservation Commission and a workgroup of experts.
- The use of alternative mitigation strategies (e.g., coral transplantation) is supported by literature, including:
    - Abelson, A. (2006). Artificial reefs vs coral transplantation as restoration tools for mitigating coral reef deterioration: benefits, concerns, and proposed guidelines. *Bulletin of marine Science*, 78(1), 151-159.
    - Monty, J. A., Gilliam, D. S., Banks, K., Stout, D. K., & Dodge, R. E. (2006). "Coral of opportunity survivorship and the use of coral nurseries in coral reef restoration". Oceanography Faculty Proceedings, Presentations, Speeches, Lectures. Paper 31.
    - Forrester, G. E., Ferguson, M. A., O'Connell-Rodwell, C. E., & Jarecki, L. L. (2014). Long-term survival and colony growth of *Acropora palmata* fragments transplanted by volunteers for restoration. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 24(1), 81-91.
    - Rinkevich, B. (2008). Management of coral reefs: We have gone wrong when neglecting active reef restoration. *Marine pollution bulletin*, 56(11), 1821-1824.
      Yap, H. T. (2009). Local changes in community diversity after coral transplantation. *Mar. Ecol. Prog. Ser*, 374(3).
- Alternative mitigation strategies, such as the transplantation of corals-of-opportunity and nursery-raised corals, have begun to be incorporated into FDEP coastal construction permits, when applicable.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal A1 / FL Priorities Goal A4 Obj. 3
- SEFCRI LAS LBSP FL Priorities Goal C4 Obj. 4 / SEFCRI LAS MICCI Issue 1 Goal / SEFCRI LAS MICCI Issue 1 Obj. 1 / SEFCRI LAS MICCI Issue 1 Obj. 2 / SEFCRI LAS

MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 2 Obj. 1 / SEFCRI LAS MICCI Issue 3 Goal / SEFCRI LAS MICCI Issue 3 Obj. 3 / SEFCRI LAS MICCI Conservation Goal C.

N-117 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Improve impact minimization and mitigation activities for unavoidable impacts to resources to reduce and offset lost ecosystem function; including the use of non-traditional mitigation strategies.

Quick Stats:

- Total number of comments on this RMA = 10

Long Responses:

3. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	if we are allowing our reefs to be destroyed, and people are supposed to make reefs just like the ones that were impacted (so like replanting a forest), those new reefs need to be as close as possible to natural reefs. and it shouldn't matter how much it costs. If the people that want the project talk about how much "money the project will generate" or "the amount of property value it will save" then they can pay for the best mitigation possible!! otherwise don't do the project.	1205	Reviewed-no action
Support	Allow & require mitigation alternatives that may not exactly replace like-for-like habitat but may contribute to a fund of county-wide or watershed restoration; enhancement project. From a past regulators perspective as well as a consulting perspective it does not make sense at all times to require a re-ocurring applicant or project to continue to mitigate for impacts the same way as the past (where past mitigation) may not have fully met the prescribed success criteria. Contributors to "Outside of Box" mitigation alternatives would contribute some of those "well" needed and funds toward regional projects.	128	integrated

Oppose	This does not minimization the impacts to the nearshore area, Minimize the damage from the project.	1414	integrated
Oppose	This project does not look at really avoiding the impacts to the reef. This makes it sound like we can just move the reef to another location. We have not successfully been able to do this. Minimization has turned into removing and transplanting organisms, and sprinkling in some nursery corals. This is mitigation banks masquerading as nursery projects. The mitigation for the port of Miami where corals were moved ended up being buried and smothered by the project. The same process is being proposed for Port Everglades. We expect the same outcome for Port everglades. The only ones who benefit are the people moving corals and running nursery. There is little or no benefit or replacement of functionality to the reef.	1067	integrated

4. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	many good projects for mitigation all not currently being considered in favor of boulder reefs	235	Reviewed-no action

Modified

Title:

S-1: Remove tires and debris from failed Broward County (Ft. Lauderdale and Deerfield Beach) (a.k.a. Osborne tire reef) artificial tire reef projects and the reef tract to eliminate damage to existing corals.

Background:

- This recommended management action relates to the coral reefs in Broward County, Florida.
- This recommended management action is being put forth because tires that were originally deposited offshore of Ft. Lauderdale and Deerfield Beach as part of an artificial reef project, have since become unbundled and are migrating onto and are damaging the reef tract during high wave energy events.

Objective:

- The intended outcome of this action is to eliminate impacts to reef resources by removing the approximately 700,000 tires from Broward County reefs and minimally remove the loose tires from the area adjacent to the reef edges. This will protect coral reef habitat and the ecosystem by helping to prevent ongoing and future damage by migrating tires. This will protect tourism in southeast Florida. Currently tourists return home with photos and stories of reefs littered with tires.

Intended Benefits and/or Potential Adverse Effects:

- A benefit of implementing this recommended management action includes eliminating ongoing damage to coral reef ecosystems.
- An issue that may arise with implementation of this recommended management action is the large cost of this effort, which may take away funds from other conservation efforts.
- The duration of the benefits of this recommended management action are long term.
- If this recommended management action is not implemented there will be continued impacts to the reefs in Broward County.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be Broward County.
- Other potential agencies or organizations who could be involved include the United States Military, Florida Department of Environmental Protection (FDEP) (solid waste disposal and permits), United States Environmental Protection Agency (may have provided a grant for the artificial reef), Broward County (technical oversight and permits), United States Army Corps of Engineers (permit), National Oceanic and Atmospheric Administration (marine debris and restoration programs), and non-governmental organizations.
- The key stakeholders for this recommended management action would be divers, government, academia, fishermen, and private business.
- The legislative considerations to take into account include a request for funding from the Tire Disposal Fee to put in the budget of the next legislative session.
- Volunteer organizations could organize and assume legal responsibility for the removal of tires on shallow reefs. A local governmental agency would then have to facilitate the disposal of tires.

Permitting/ Enforcement Requirements of RMA:

- Permitting requirements for this recommended management action include those already secured by Broward County for tires at 65' depth off Ft. Lauderdale. Other permits possibly needed include FDEP and United States Army Corps Joint Environmental Resource Permit, and Broward County permits (if lead is not Broward County).
- There are no enforcement requirements with this recommended management action.
- A measurable way to show success with this recommended management action is the quantity of tires removed.

Cost:

- The estimated direct cost of implementing this recommended management action is $3-5 million initially and then costs would need to be re-estimated based on numbers and locations of the tires. For example, it will cost approximately $15 to remove each loose tire (does not include buried tires) followed by an additional $3 disposal fee per tire.
- Potential funding sources include the State of Florida current collection of a $1 disposal fee on all tires. This money was used to clean up used tire dump sites and is now put into the general fund. In 2010 the state collected over $16 million in disposal fees. Now that most of the old tire dump sites have been cleaned up, a portion of this money should be used to clean up the offshore tire reef. However, this tax is used to fund multiple projects, and is not easily accessible. There will need to be a request for funding from the Tire Disposal Fee put in the budget of the next legislative session. Other agency groups that may be interested or should be approached regarding funding and the importance of funding include the Appropriations Subcommittee on Transportation Tourism and Economic Development, the Agriculture & Natural Resources Subcommittee, and potentially Goodyear or other tire companies.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action should be in the next 1 - 2 years, but to actually complete the action would take 10 years. The timeframe includes securing funding, evaluating, planning, permitting and removal of the tires.

Miscellaneous Info:

- This recommended management action is not linked to other recommended management actions.
- Some uncertainties or gaps with this recommended management action include the confirmation of the actual number of tires still on the ocean floor and the location of loose tires.
- Supporting and relevant data includes the following:
    - Sherman, Robin L. and Spieler, Richard E., "Tires: Unstable Materials For Artificial Reef Construction" (2006). *Oceanography Faculty Proceedings, Presentations, Speeches, Lectures.* Paper 58. http://nsuworks.nova.edu/occ_facpresentations/58
    - Waste Tires in Florida, State of the State, September 9, 2011
    - http://www.dep.state.fl.us/waste/quick_topics/publications/shw/tires/2010_Tires_State-of-the-State.pdf
- Some removal efforts have taken place and additional efforts are ongoing.

Goals/ Objectives to be Achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal D2 / FL Priorities Goal D2 Obj. 3.
- SEFCRI LAS FDOU Issue 3 Goal.

S-1 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Remove tires and debris from failed Broward County (Ft. Lauderdale and Deerfield Beach) (a.k.a. Osborne tire reef) artificial tire reef projects and the reef tract to eliminate damage to existing corals.

Quick Stats:

- Total number of comments on this RMA = 17

Long Responses:

5. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	Clean up the tires Now. Find the money	1413	Reviewed-no action
Support	Excellent idea. I find those tires all over the place. Even on shallow reefs.	1213	Reviewed-no action
Support	This needs to be done as soon as Possible.	1068	Reviewed-no action
Support	What I support about the draft RMA is they're willing to be generous to save the marine environment by taking out all types of debris that's in the ocean. They see all the marine animals and plants as prize possession, so they definitely need to be protected more.	1033	Reviewed-no action
Support	Allow & require mitigation alternatives that may not exactly replace like-for-like habitat but may contribute to a fund of county-wide or watershed restoration; enhancement project. From a past regulators perspective as well as a consulting perspective it does not make sense at all times to require a re-ocurring applicant or project to continue to mitigate for impacts the same way as the past (where past mitigation) may not have fully met the prescribed success criteria. Contributors to "Outside of Box" mitigation alternatives would contribute some of those "well" needed and funds toward regional projects.	129	Integrated into N-117
Support	I support the removal of tires to lessen impacts on live corals on the east coast of florida. I was unaware prior to what risks tires would impose on reefs. Good to understand the physical damage they can cause	273	Reviewed-no action
Other	Broward county needs to be held responsible and	1520	Funding

	accountable. having others do it is nice but we essentaily have the equivilant of a brown field superfund site and broward county and the permits that allowed it aren't being held accountable! the governement talk about creating jobs, well paying to have this cleaned up would employee a good many people for quite a while		identified already
Other	pick up the tires and dump them in deep water over 300 ft. You want to haul them to shore and fill a landfill with them and waster all the money for transport?	708	This is illegal

6. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	this obviously needs to get done	**271**	**agreed**
Other	I attend Alonzo and Tracy Senior High School in Miami-Dade County and I'm proud to be apart of the Marine Environmental Science Academy.	**1033**	Reviewed-no action
Other	I believe we should get people to volunteer to remove the tires out of the ocean ASAP. Since paying for someone to do it is too expensive, getting volunteers would be much more economical	**347**	integrated
Other	tire removal should be made more open to public volunteerism especially in ecosystem-school programs	**349**	integrated
Other	maybe clubs, civic groups or volunteers could be involved	**363**	integrated

Not modified

Title:

S-102: Develop and integrate more effective quality control procedures in the regulatory framework and triggers within permits for corrective action during coastal development projects to insure protection of marine habitat and species.

Background:

- This recommended management action relates to all projects, but specifically to reef and reef associated resources in the entire State of Florida.
- This recommended management action is being put forth because of a lack of effective compliance monitoring and corrective actions with respect to current and proposed projects. Triggers for timely adjustments of projects are agreed-upon and placed into permits, but there is a lack of a quality control process to sample work performed, assess the degree to which specifications are met, and detect anomalies and unexpected consequences as they occur. Without quality control procedures in place, substantial environmental damage can occur and will only be detected after the project completion.

Objective:

- The intended outcome of this action is to develop and establish a more effective quality control process within the regulatory framework that ensures enforceability of permit conditions, as well as having clearly defined triggers which allow for rapid (timely) adjustment of projects, such as ceasing operation. Quality control can include legal review of permits to ensure independent and agency-approved biological contractors, or agency on-site monitoring. Permits should integrate clear and actionable triggers for corrective action (such as ceasing operation) in permits when violations are reported (i.e. make sure there is a mechanism for rapid response and ceasing operations).
- Effective practices of quality control will make it more likely that planned environmental improvements will be achieved and damage and losses minimized. Effective practices that lead to improved reef health and less unavoidable damage will thereby benefit tourism, improve fishing and water sports, and allow intelligent port development, along with enhancement of economic growth.
- A blanket goal or objective of every project should be to prevent harm to the resources, since there will always be issues that you can't foresee. Coastal construction projects should be subject to quality control procedures which are feasible, measurable, timely, unbiased, realistic, and capable of providing feedback leading to remedial action. In essence, a good quality control procedure will ensure project mission attainment and achievement of contract goals. Design flaws and implementation problems can be detected quickly and the project modified or re-directed as needed. Once a project's quality control program is defined, performance data should be collected by a qualified third party and reported to all stakeholders. Issues such as excessive silting, partial mortality of benthic organisms, unexpected collateral damage due to blasting, and careless dumping of spoil would then be quickly identified and mitigated. A proper quality control program will sample progress periodically, compare results to specifications, and report any deviations. Corrective action, or project modification, can then take place in a timely manner.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include detecting a project's problems early and avoiding or minimizing impacts to resources before damage occurs or becomes extensive through rapid response and corrective action.
- Some possible issues that may arise with implementation of this recommended management action include quality control procedures, which are a watchdog function and acts to ensure that project design specifications and outcomes are in fact met. This inevitably creates a natural friction between contractors and clients, the latter typically government entities. Conflict over project goal attainment may be substantial, but is usually in the public interest while reducing a project's profitability for the contractor. Additional triggers for adapting project work or ceasing work will increase costs (but may actually reduce costs since mitigation may not be needed on the backend if there are no impacts.) Contract modifications may be necessary through adaptive management, and contract modifications can be complicated.
- If this recommended management action is not implemented there will be continued impacts to the reefs with no rapid response. The consequences of poor quality control include uncontrolled damage, waste of resources, legal and political conflict, and environmental degradation. Corporations, especially those controlled by foreign powers, tend to water-down quality control procedures in a drive for improved profitability and improved market share, as the BP disaster in the Gulf of Mexico amply demonstrated. Strong regulation, which is a type of quality control, has proven effective in protecting the environment.

Agencies/ Organizations:

- The lead agencies for implementation of this recommended management action would be all organizations that either perform or control projects.
- Other potential agencies or organizations who could be involved were not indicated within this recommended management action.
- The key stakeholders for this recommended management action would be taxpayers and their representatives, since poor quality wastes resources, which are always in short supply, and compromises successful goal attainment. Every section of society can be expected to support quality assurance programs, except for those who stand to profit in some way from poor quality and incomplete goal attainment. For example, Port of Miami has nothing to gain and business to lose in the improvement of Port Everglades, a nearby competitor. Theoretically, at the state level, Miami-Dade representatives might lobby for budget cuts to projects at Broward's Port Everglades, cuts which might reduce quality control activities and thus hamper project goal attainment and create errors and under-performance.
- No legislative considerations were identified.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements with this recommended management action, nor are there enforcement requirements.
- A measurable way to show success with this recommended management action is increased compliance with specific conditions and reduced impacts to resources.

Cost:

- The estimated direct cost of implementing this recommended management action is greater than $250,000 to support a minimum of two new Florida Department of Environmental Protection staff for permit compliance. This cost is recurring annually because staff would permanent. This estimate also includes a vessel for site visits, gas and the necessary certifications to perform the work, including SCUBA certifications and field equipment.
- Funding may be acquired through a legislative budget request.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- This recommended management action is not linked to other recommended management actions.
- Uncertainties or information gaps were not identified for this recommended management action.
- Supporting and relevant data include ample proof of the effectiveness of good quality control in the manufacturing, service, and construction industries, where end products are highly visible and citizens are affected personally. In the marine environment, underwater activity is not readily visible, relatively few informed citizens are involved, merchant shipping and cruise lines are largely foreign-owned, and special interests pursue their own narrow objectives. Quality control is therefore not a high priority.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- Goals and Objectives were not identified within this recommended management action.

S-102 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Develop and integrate more effective quality control procedures in the regulatory framework and triggers within permits for corrective action during coastal development projects to insure protection of marine habitat and species.

Quick Stats:

- Total number of comments on this RMA = 6
- Charles T. Berkley Letter
    - Certainly, contractors should be responsible for their actions and there are already laws on the books pertaining to remedial procedures and fines for reef damage and etc. And

additional restraints and penalties can easily be incorporated into contracts, as can specific guidelines or procedures. Still, as was the case when the Hillsboro Inlet was widened a few years back, the whole thing ended up as one giant cluster---… One can only hope governmental oversight agencies and the department which draft and approve such contracts learned from this and have since incorporated these lessons into their policies.

- CWG Response: This comment was reviewed. Contracts aren't enforceable it has to be in the permit to be enforceable. No action.

Long Responses:

7. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	there is a lot of jargon and circular talking in this. yes, in general having clearly defined impacts that trigger construction to stop is a good thing and should occur. there is a huge hole in this recommendations argument, and that is no one cares how well a project "performs" as it relates to not impacting the environment, they care about how it performs as in the end product. so you can't have Quality assurance on the part of the project that is tangential when that's not what the person buidling the project cares about.	1259	Specific terms are necessary for agency implementation.
Support	important idea. If compliance is not monitored why even have quality control? Not only need monitoring but also need remedial action. Otherwise there is no reason to comply.	275	Reviewed-no action

8. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	this is essential!! Need to be able to shut down out of compliance projects.	**231**	Reviewed-no action

Not modified

Title:

S-107: Encourage region-wide biological monitoring (e.g. via Beach Management Agreements) to document condition of resources that may be impacted by nourishment projects and inform regulatory decisions to ensure ecological functions are maintained.

Background:

- This recommended management action relates to nearshore hardbottom resources in Miami-Dade, Broward, Palm Beach, and Martin counties.
- This recommended management action is being put forth because nearshore hardbottom resources that may be impacted by beach nourishment projects are only monitored in areas adjacent to a project and not continually. Furthermore, monitoring data do not provide information on natural variability of nearshore habitats (e.g., spatial-temporal patterns of hardbottom exposure, stochastic recruitment of benthic organisms etc.). Monitoring protocols can differ from project to project. Regional monitoring will establish predictable and systematic data collection methodologies over the entire area and improve the evaluation of coastal resources over the long term.

Objective:

- The intended outcome of this action is to improve the quality of information on resources that may be impacted by nourishment projects and coastal construction, so that this information can be used to improve project designs in such a way that impacts are minimized. Region- wide biological monitoring data can improve understanding of project-related impacts to resources and improve regulatory actions to ensure that ecosystem functions provided by nearshore habitats are maintained.
- Region-wide monitoring will allow the regulatory agencies to evaluate the status of nearshore resources that may be impacted by nourishment projects. Nourishment projects are necessary for erosion control and to support tourist industry. These projects have important economic consequences. Monitoring data should provide regulators with information that can be used to improve resource regulation, balancing the need for nourishment and ensuring the continued function of nearshore hardbottom habitats.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include a regional approach that advances the understanding of coastal ecosystems in general, while improving the quality of recommendations to enhance protection strategies for hardbottom and marine turtle nesting habitats and other area resources (may include infauna such as coquinas and mole crabs). Information on nearshore hardbottom resources will be available to regulatory agencies and can be used for baseline information in the project area needed for permit applications. Monitoring will provide the Florida Department of Environmental Protection (FDEP) with reasonable assurance that potential impacts will be documented. If impacts occur, monitoring data can be used for the Uniform Mitigation Assessment Method to accurately calculate mitigation requirements.
- Some anticipated negative economic impacts associated with this recommended management action include funding for long-term and regional biological monitoring may exceed cost of monitoring on a project-by-project basis.
- The duration of the benefits of this recommended management action is long term.
- If this recommended management action is not implemented regulatory agencies will continue to rely on short-term monitoring that is conducted on a project-by-project basis. Regulatory

decisions will be based on all available information, but these decisions will not be as well informed as they would be if long-term, region-wide biological data for nearshore resources were available.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the FDEP.
- Other potential agencies who could be involved include local government agencies.
- The key stakeholders for this recommended management action would be local (city and county) and state governments, as well as other stakeholders involved with beach nourishment projects that require biological monitoring. Firms that conduct monitoring would be most impacted by this recommended management action.
- There are no legislative considerations for this action.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements for recommended management action.
- Enforcement requirements for this recommended management action include the oversight and compliance and enforcement of projects.
- Means of demonstrating success of this recommended management action include monitoring data and reports, development of better resource management protocols, which may take a more regionalized approach, and the establishment of regional monitoring plans for all four counties in southeast Florida.

Cost:

- The estimated direct cost of implementing this recommended management action does not relate to implementation of the action itself, but rather to the project sponsors whom it could cost upwards of between $300,000 and $450,000/year to monitor a single project that is 2 - 4 miles long.
- Funding may be acquired through the project sponsors who could incorporate the added expense into the cost of the project, as is the current practice.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- This recommended management action is linked to N-114 to reinstate the FDEP dive program.
- An uncertainty or information gap with this recommended management action is the current Beach Management Agreement implemented in Palm Beach County (Town of Palm Beach) that has yet to be evaluated. While there are uncertainties regarding this approach, it seems promising.
- Supporting and relevant data include a review of Palm Beach's Beach Management Agreement.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- SEFCRI LAS MICCI Issue 2 Goal Obj. 1 / SEFCRI LAS MICCI Conservation Goal C / SEFCRI LAS MICCI Issue 1 / SEFCRI LAS MICCI Issue 4.

S-107 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Encourage region-wide biological monitoring (e.g. via Beach Management Agreements) to document condition of resources that may be impacted by nourishment projects and inform regulatory decisions to ensure ecological functions are maintained.

Quick Stats:

- Total number of comments on this RMA = 9
- Called out in Mike kennedy's letter in reference to N-146, however CWGs does not understand the link that this RMA has to no take zones. Considered possibly a typo?

Long Responses:

9. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	We need to know what is going on after these sand events. In 2014 when they thickened the beaches I saw the coral in Lauderdale by the Sea get sick and die. I feel like it had something to do with the sand placed on the beach. Without proper study, we will never be able to connect the dots.	1081	Reviewed-no action
Support	should say "require" rather than encourage	220	Cost-prohibitive. Not feasible. Statutory changes may be required.
Other	very concerned about nourishment	119	agree

10. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	I am concerned about the disappearance of sand fleas (mole crabs) after beach nourishing projects. This needs to be studied as they are a very important food source for surf and near shore reef fish as well as a bait source for fishermen.	698	**integrated**
Other	we need more enforcement on turbidity from these projects	119	**Beyond the scope and scale of this RMA and addressed in others**

Not modified

Title:

S-114: Create and implement mechanisms that allow permitting agencies to apply lessons learned from past projects to future projects to minimize impacts to resources and improve success of mitigation activities.

Background:

- This recommended management action is intended to be applied statewide, including Miami-Dade, Broward, Palm Beach, and Martin counties, and is relevant to all habitat types. Lessons learned may be applied to other regions, but unique characteristics need to be considered when comparing one area to another, as well as within the same region.
- This recommended management action is being put forth due to the variations in specific conditions, timing, contractors, etc. By applying lessons learned that are available to permit reviewers, more can be done to reduce impacts to resources and optimize the performance of mitigation. In additional, permit reviewers can provide justification to applicants for decisions made during the permitting process so that they have a better understanding of the process.
- The Southeast Florida Coral Reef Imitative (SEFCRI) Maritime Industry and Coastal Construction Impact Project 4 was completed in order to understand how to improve compliance and enforcement. Some of the recommendations included improved permitting language and specific requirements for permitters and permittees to have meetings before, during, and after construction to discuss lessons learned, see: http://www.dep.state.fl.us/coastal/programs/coral/reports/MICCI/04/MICCI_04_21_23_24_Phase_2_Report.pdf

Objective:

- The intended outcome of this action is to provide an application of the lessons-learned to provide multiple environmental benefits, including, but not limited to, better resource protection and impact minimization, maintaining the function of natural resources and increasing the ecological functions provided by mitigation activities. More effective project designs that minimize impacts to resources have already been realized. Learning from previous projects will fine tune the direction of future projects and take out some of the guess work that comes with the types of activities being proposed and, ultimately, results in a better end product. One of the many positive aspects of applying a lessons-learned approach is the potential for improved permitting language, which can incorporate lessons learned. More effective designs lead to better science and management, which, in turn, help refine the scientific questions aimed at improving future restoration projects.
- The application of a lessons-learned approach could potentially reduce the costs of coastal construction projects and any compensatory mitigation activities required.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include: (1) more informed staff (projects managers and permit reviewers) for projects design and permitting, potentially improving the effectiveness of avoidance, minimization and mitigation measures, (2) the function of natural resources would be better maintained and the ecological functions provided by mitigation improved, (3) the application of the lessons-learned approach could potentially reduce the costs of projects, and (4) one of the biggest

improvements that can be made is creating and using standardized permitting language that can be updated over the years with specific categories of permitting language (e.g. specific language for dredging, pipes, nourishment).

- Some potential disadvantages associated with this recommended management action include: (1) this will most likely entail a lot of effort for very little return, (2) there are too many projects and timespans are too long. Sometimes, big picture lessons-learned come through and are implemented naturally which is probably the best that can be hoped for, because even when strategies are implemented, knowledge of how each and every special permit condition came to be is near impossible. (3) trying to track every lesson learned - when each project can be so unique - and then apply those lessons learned, may be an exercise in futility, and (4) permit processors have little to no time to do this with their strict time clock turnarounds, thus this may need to be something that is a rule or policy.
- This should not be over-generalized, the lessons learned from one project may not translate to another. Lessons learned do not apply in each and every situation. However, the purpose of lessons-learned activities is to apply when appropriate and applicable, and commonalities across projects should not be undervalued as being too disparate for comparison.
- This process – to review other projects - takes extra time and diligence. Recommendations that come from applying the lessons-learned approach could potentially increase the cost or construction time for some projects, although this is unlikely. In fact, a lessons-learned approach may actually reduce project costs over time.
- There are no anticipated negative environmental impacts for this recommended action.
- If this recommended management action is not implemented, and past projects do not get evaluated to determine reasons for success and shortcomings, then past mistakes may repeat themselves and strategies that were successful may not be applied to future projects. Projects may impact resources when alternative strategies could have been employed to minimize or avoid impacts. If lessons are not applied to mitigation, then projects may not be as successful or achieve the optimum ecosystem function that could have been achieved if other techniques had been employed.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection (FDEP) and any other regulatory or stakeholder group involved in coastal construction activities.
- Other agencies or organizations who could be involved include Florida's water management districts, United States Army Corps of Engineers, National Marine Fisheries Service, Florida Fish and Wildlife Conservation Commission, county governments and the Florida Keys National Marine Sanctuary. The Florida Coastal Office, SEFCRI, and non-profits could all contribute information on past projects (construction and mitigation).
- The key stakeholders for this recommended management action would be any party involved in coastal construction activities (including permittees and regulatory agencies).
- FDEP is currently applying lessons-learned and actively working towards improving this process.
- Potentially, lessons-learned regarding the minimization or avoidance of impacts may conflict with the interests of stakeholder groups that seek to construct projects in the most cost-effective manner. Creating some mechanism to record lessons learned and having

each and every permit reviewer be able to access each and every permit similar to the one they are working on will be a monumental effort, most likely requiring a database. It is necessary to determine which lessons – if any - are universally applicable and which lessons are only applicable to certain types of projects (e.g., those projects that are similar in scope/scale with the same type of natural communities). It is necessary to identify commonalities and dissimilarities between projects in order to determine which lessons-learned are applicable.

- This recommended management action does not conflict with any legislative considerations.

Permitting/ Enforcement Requirements of MA:

- There are no permitting or enforcement requirements for this recommended management action.
- A way to provide a means to measure the success of this recommended management action includes: (1) evaluation by assessing coastal construction permit improvements over time, (2) the impacts resulting from coastal construction projects could be tracked over time to document improvement in the minimization and avoidance of impacts (by using better permit conditions), and (3) the Society for Ecological Restoration publishes guidelines that include designing metrics for evaluating project success. They are generally easy to monitor but often require some hard thinking beforehand to turn warm-and-fuzzy notions of "success" into operational definitions that can be quantified.

Cost:

- The estimated direct cost of implementing this recommended management action is $0 - $50,000. The main cost associated with this action is additional staff time, which will happen on a recurring project-by project basis.
- This recommended management action will likely not require additional funding, as the only expected costs are additional regulatory staff time devoted to the evaluation of project performance/outcomes.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- This recommended management action is linked to S-107 and any other recommended management action that relates to the regulation and permitting of coastal construction projects.
- Some uncertainties or information gaps with this recommended management action include: (1) defining a mechanism by which a lessons-learned approach can be implemented and/or formalized by regulatory agencies, (2) regulatory agencies could voluntarily produce a lessons-learned document at the completion of major coastal construction projects that outlines any issues that were encountered and how they were addressed, or how similar issues should be addressed/avoided in the future. Additionally, the document should summarize any novel or ingenious aspects of the project (such as monitoring protocols, mitigation activities, or Best Management Practices) that were

successful and should be repeated in the future. Lesson-learned documents drafted by FDEP could be placed on the FDEP website or made available via Oculus, (3) another alternative would be to assemble a review panel consisting of regulatory agencies and stakeholders, as well as individuals with specific expertise (e.g., construction professionals and academics) annually or following the completion of major coastal construction projects to discuss lessons-learned. The findings from this workgroup could be summarized in a lessons-learned document and/or meeting minutes could be made available to the public. Perhaps such a workgroup could be assembled on an annual or biennial basis to discuss lessons-learned in general, instead of focusing on a specific project, (4) one of the outcomes of the lessons-learned process could be the development and iterative revision of standard permit-conditions that can be applied to similar coastal construction projects (e.g., projects that are similar in scope/scale that are expected to result in similar impacts to the same type of natural community).

- Supporting and relevant data include information on the adaptive management of resources. Overall, this action entails data and information collection, as well as utilizing the best-available science with each application.
- Currently, FDEP is doing this. However, the process could be improved or be more formalized.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal A1.
- SEFCRI LAS LBSP Goal C1 Obj. 1 / SEFCRI LAS LBSP Goal C4 Obj. 4 / SEFCRI LAS FDOU SEFCRI LAS Issue 3 Goal / SEFCRI LAS MICCI Goal A1 Obj. 3 / SEFCRI LAS MICCI Conservation Goal C / SEFCRI LAS MICCI Issue 1 Goal / SEFCRI LAS MICCI Issue 1 Goal Obj. / SEFCRI LAS MICCI Issue 1 Goal Obj. 2 / SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 2 Goal Obj. 1 / SEFCRI LAS MICCI Issue 3 Goal Obj. 3 / SEFCRI LAS MICCI Issue 4 Goal.

S-114 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Create and implement mechanisms that allow permitting agencies to apply lessons learned from past projects to future projects to minimize impacts to resources and improve success of mitigation activities.

Quick Stats:

- Total number of comments on this RMA = 8

Long Responses:

11. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	They learn what the problems are but they do the same thing over and over again. Money talks and the reef loses.	1416	Reviewed-no action
Oppose	this just seems like a waste of time. there are hundreds of projects and so many different people working on them everywhere, unless you miraculously have people that stay in the same job forever the historical knowledge is lost and there's no way to impart all of it to a new employee or whatever. and things change from year to year, so lessons learned 5 years ago may not apply now.	1207	All points addressed in RMA.

12. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	how is this not already being done!?	225	Reviewed-no action
Support	shouldn't the application of past learnings be part of ALL good management practice?	277	Reviewed-no action

Not modified

Title:

N-114: Reinstate funding for regulatory agencies (reinstate Florida Department of Environmental Protection's Southeast District dive teams) to provide in-water permit compliance monitoring as needed for reef related projects, and assist other agencies with monitoring (fish/coral surveys).

Background:

- This recommended management action relates to all counties within the Miami-Dade, Broward, Palm Beach, and Martin county region and the relevant habitats such as coral reefs, seagrass beds, hardbottom, and areas adjacent to the reefs.
- This recommended management action is being put forth because currently there are no regulatory divers to address impacts to coral reefs and ensure permit compliance. The Florida Department of Environmental Protection (FDEP) has no way of verifying the presence of corals when issuing a permit, nor does the FDEP staff have firsthand knowledge when developing permit conditions. Once the permit has been issued the FDEP has no way of verifying if the projects have been constructed as permitted or if during construction the permittee avoided impacts to reefs or associated habitats such as seagrasses. It is necessary to have verifiable knowledge of existing site conditions to ensure permit compliance and minimize impacts to the reef and related ecosystems. This way, regulatory staff will be to verify the existing resources and be able to hold permittees accountable for associated project impacts and non-compliance of permit conditions.

Objective:

- The intended outcome of this action is to provide long-term underwater science support for nearshore environmental impact assessments for permits and compliance and enforcement activities and to increase compliance with specific permit conditions.
- Some social and economic benefits or positive impacts that this recommended management action may have include the assurance of compliance and enforcement of specific permit conditions. It will provide regulatory oversight to projects that pose potential impacts to resources, and it will document resources that are at stake, which will maintain the economic value of our coral reef system and the enjoyment of our reefs by residents and tourists alike.

Intended Benefits and/or Potential Adverse Effects:

- Some potential benefits to implementing this recommended management action include: (1) increased enforcement of permit conditions for protection of coral reefs, (2) better regulation of activities in areas where corals are present, (3) increased interagency cooperation between the FDEP, including Parks and Recreation, and agencies such as National Oceanic and Atmospheric Administration (NOAA), Florida Fish and Wildlife Conservation Commission (FWC), and the US Army Corps of Engineers (USACE) to carry out any required in-water work such as fish surveys, mooring ball monitoring, and coral damage impact assessments, (4) less damage for complying permittees, (5) better documentation of impacts or violations, (6) an increase in staff within the FDEP, (7) an increase in public awareness, (8) greater incentive for permittees to comply with permit conditions (by being monitored), and (9) with a reduction in impacts, the intrinsic value of state resources would remain intact. With the reduction of impacts there would be a

reduction in available funds spent on additional mitigation by the project sponsor or permittee to cover those losses.

- Some possible issues that may arise with implementation of this recommended management action would include increased costs to taxpayers to fund positions. However, economic benefit of intact reefs could intrinsically offset this cost.
- If this recommended management action were not to be implemented, without a district underwater scientific dive team, environmental regulation programs have no way of preforming underwater assessments before issuance of a permit in order to understand the resources being impacted or the specific permit conditions that may be applicable, thereby leading to a higher risk that non-permitted impacts could occur. There would be no way of ensuring compliance and enforcement of a permit which could lead to impacts that go unreported or undervaluation of mitigation for those impacts.
- In the current situation, the FDEP relies on information submitted by consultants regarding coral impacts, and has no way of verifying the validity or accuracy of that information. There is a need for some level of oversight to ensure truthfulness and quality on underwater assessments before and after permitting.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be FDEP's Environmental Resource Permitting program and Beaches and Inlets program.
- Other potential agencies or organizations who could be involved include the South Florida Coral Reef Initiative (SEFCRI), FWC, NOAA, and the USACE, which may all benefit and support reinstating the FDEP's dive team as this provides a second review of resource surveys and impacts. At this time USACE is not allowed in the water below their waistline.
- The key stakeholders for this recommended management action would be the consultants; tax paying citizens; recreational users; coastal construction businesses; and the governmental agencies that have used the FDEP's dive teams for review of in water assessments.
- There are no potential technical challenges to implementing this recommended management action due to the likeness to a previous FDEP program. In the past there were training requirements: first responder, oxygen administration and equipment training were required for each dive team member. There is, however, a challenge with reinstating the dive team due to securing funding in the current administration.
- The legislative considerations to take into account include the creation of more positions. However, if current staff were to resume their previous roles on the dive team there would be no need for legislative action.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting or enforcement requirements with this recommended management action.
- A way to provide a means to measure the success of this recommended management action includes the reinstatement of the dive team; the frequency of dives; and environmental assessment summaries from the site which provide additional information not previously captured or available.

Cost:

- The estimated direct cost of implementing this recommended management action for basic implementation would be $2,500-$2,700 to reinstate the dive team annually and $50,000-$100,000 if new positions would need to be created. There would be reoccurring annual costs of equipment and boat maintenance, and medical monitoring costs every 3-5 years.
- It is unlikely that there will ever be a time that a dive team would not be needed, due to the constant high volume of coastal construction permits being applied for.
- Potential funding source can be acquired through the FDEP's annual budget. Costs for the FDEP Southeast District dive team were less than $2,700/year.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- This recommended management action is not linked with any other recommended management actions.
- Some uncertainties or gaps with this recommended management action include determining the number of staff needed to be able to appropriately ensure compliance and enforcement and determine the frequency with which staff should conduct site visits (this would be project dependent).
- The existing science that supports this action includes the Florida Reef Resilience Program, Climate Change Action Plan for Florida Reef System (2010-2015); and scientific monitoring using underwater scientists to gauge environmental changes nearshore.
- In April 2013, the FDEP S Southeast District dive program was inactivated due to budget cuts and errors in reporting of dive team expenditures. The actual costs of the dive team were much lower than what was reported. While the reporting was conducted by an FDEP employee, this staff member was unfamiliar with the dive program.
- FDEP has existing compliance staff, but positions have been eliminated, leaving only one staff per county to oversee all Environmental Resource permits. Currently there are only two Beaches and Coastal staff for the entire southeast Florida region.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal A1, Obj. 3 / FL Priorities Goal A2 / FL Priorities Goal A4, Obj. 1 / FL Priorities Goal D1 / FL Priorities Goal D2 Obj. 2 / FL Priorities Goal D3 Obj. 1.
- FDEP CRCP Coral Reef Ecosystem Conservation Goal C, Obj. 5 / FDEP CRCP Coral Reef Ecosystem Conservation Goal G, Obj. 6 / FDEP CRCP Coral Reef Ecosystem Conservation Goal G, Obj. 7.
- SEFCRI LAS FDOU Issue 3 Goal; Obj. 2 / SEFCRI LAS FDOU Issue 3 Goal; Obj. 3 / SEFCRI LAS MICCI Issue 1 Goal; Obj. 1 / SEFCRI LAS MICCI Issue 1 Goal; Obj. 2 / SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 3 Goal; Obj. 1 / SEFCRI LAS MICCI Issue 3 Goal; Obj. 2 / SEFCRI LAS MICCI Issue 4 Goal; Obj. 1 / SEFCRI LAS MICCI Issue 4 Goal Obj. 2.

N-114 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Reinstate funding for regulatory agencies (reinstate Florida Department of Environmental Protection's Southeast District Dive Teams) to provide in water permit compliance monitoring as needed for reef related projects, and assist other agencies with monitoring (fish/coral surveys).

Quick Stats:

- Total number of comments on this RMA = 12

Long Responses:

13. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	it is ridiculous that people that permit impacts can't look at the reef, how can they do their job?	1203	Reviewed-no action
Support	We cannot leave construction companies to provide data on the impact of development. We need long term data that shows the true impact so our governing agencies can make informed decisions.	1080	Reviewed-no action
Support	need better interagency and federal coordination and need to be able to shut down projects out of compliance.	222	Reviewed-no action
Support	having dive surveys to monitor reef presence/health by agency divers is a good way to standardize reef surveys	274	Reviewed-no action

14. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	it would be beneficial to increase FDEPs time in the water to get a better idea of baseline conditions, conditions during construction projects, and conditions after construction projects have concluded so as to get the whole story of impacts that occur and what those impacts are attributed to (anthropogenic or natural)	272	Reviewed-no action

Reviewed-no action
Modified

Title:

S-100: Support redefining the Port of Miami anchorage zone to remove four areas with reported coral from the existing anchor zone, reduce anchor damage currently being caused by ships anchoring zone which includes some coral reef.

Background:

- This recommended management action relates to reef resources within the Port of Miami commercial anchorage in Miami-Dade County.
- This recommended management action is being put forth because it has been five years since the Florida Coral Reef Protection Act was passed and four years since the report: *A Study to Minimize or Eliminate Hardbottom and Reef Impacts from Anchoring activities in Designated Anchorages at the Ports of Miami and Palm Beach* by Dr. Brian K. Walker was published. Nonetheless, there is still a designated commercial anchorage located over approximately 700 acres of coral reef. Currently, a new design has been presented and an implementation process is underway to modify the present Port of Miami anchorage configuration. This process will take considerable time as it includes public meetings and agency review. This recommendation supports that effort.

Objective:

- The intended outcome of this action is to reduce anchor damage to existing coral reefs through the designation of a new commercial anchorage for the Port of Miami. This will also help improve vessel safety and ensure successful Port operations which rely to some extent on the availability of safe anchorage zones. This recommended action would ensure the area designated is indeed more ideal for anchoring (i.e. has sand for anchors to dig into rather than hardbottom which can cause slippage).

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include reducing impacts to reef resources and providing a commercial anchorage that is safer than the one currently in use.
- An anticipated negative impact associated with this recommended management action is that the current redesign proposal will still impact reef resources.
- The duration of the benefits of this recommended management action is 1 - 2 years.
- If this recommended management action is not implemented there will be continued impacts to the reefs, vessels will continue to be at risk of slipping anchors, and large vessels would be at risk of grounding within the anchorage.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the United States Coast Guard.
- Other potential agencies or organizations who could be involved include National Oceanic and Atmospheric Administration (NOAA) (chart updates), Miami-Dade County Dept. of Regulatory and Economic Resources, Florida Department of Environmental Protection, Port of Miami, Miami River Authority, and NOAA National Marine Fisheries protected species and habitats divisions.
- The key stakeholders for this recommended management action would be the shipping

community.
- No legislative considerations were indicated for this recommended management action.

Permitting/ Enforcement Requirements of RMA:

- There are permitting requirements associated with this recommended management action. Since hardbottom remains in the current proposed design, it will require a permit for the potential take of several threatened species of coral and an exception in Florida's Coral Reef Protection Act.
- Enforcement requirements for this recommended management action include the current effort by Florida's Coral Reef Conservation Program to monitor the new anchorage and report vessels that are not anchoring in the correct area. If vessels are anchored outside of the designated area the potential exists to enforce Florida's Coral Reef Protection Act.
- A measurable way to show success with this recommended management action is through the successful re-charting of the current anchorage.

Cost:

- The estimated direct cost of implementing this recommended management action is zero dollars.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 1 - 2 years.

Miscellaneous Info:

- This recommended management action is not linked to any other recommended management action.
- Uncertainties or information gaps were not indicated in this action.
- Supporting and relevant data include many studies which show that anchors do damage to benthic resources.
- Currently the United States Coast Guard, Florida Department of Environmental Protection, and the Port of Miami anchorage working group have been conducting research and working with partners to develop the best, new anchorage design. A new design has been presented and is moving forward in the implementation process.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- SEFCRI LAS MICCI Issue 1 Goal Obj. 3.

S-100 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Support redefining the Port of Miami anchorage zone to remove four areas with reported coral from the existing anchor zone, reduce anchor damage currently being caused by ships anchoring zone which includes some coral reef.

Quick Stats:

- Total number of comments on this RMA = 4

Long Responses:

15. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	need more protection for miami reefs	118	Reviewed-no action

16. "Other comments or input": NONE

Category	Comment	Ref #	CWG response

Not modified

Title:

S-101: Create a training program based on existing Best Management Practices that will be required for coastal construction on-site project contractors to be implemented by January 1, 2020, as required in a coastal construction permit.

Background:

- This recommended management action relates to all relevant habitats including coral reefs, hardbottom, and seagrasses in the entire State of Florida.
- This recommended management action is being put forth because most coastal construction can negatively impact nearshore reefs and ecosystems, and our existing practices are detrimental to reef system health. This recommendation will reduce negative impacts from landscaping, coastal construction, and agriculture. While involuntary guidelines, rules, codes, and permits are imposed by the government, they can take significant time to update and are subject to politics and financial interests. A carefully constructed program similar to the popular Leadership in Energy & Environmental Design (LEED) could voluntarily enhance and increase smart/friendly construction via the power of certified green product marketing and financing.

Objective:

- The intent of this recommended management action is to lessen damage to southeast Florida coral reefs and improve water quality by increasing the number of coastal construction companies and/or professional individuals certified in project management "Best Management Practices" (BMPs). This would be achieved through increased compliance with permit conditions and increased awareness of coastal construction impacts to reef ecosystems. This action calls for voluntary compliance, which will benefit the environment through adherence to the latest and greatest methods. While it would initially be voluntary, certification could eventually be made mandatory by the state. In addition, the permittee and project sponsor can require contractors to complete the training process to be eligible bidders, who would then gain favorable consideration.
- The green industries best management practices is an example and could be used as a base point, as could the Florida Clean Marina Program or the Atlantic Coast Fish Habitat Partnership. Coastal construction companies should be involved from the start to help shape the program and develop the certification. This certification could be provided and updated annually, with annual refreshers highlighting lessons learned and adaptive best practices moving forward.
- Many contractors are from outside our region and unaware of local resources or the importance of the resources. There may be a disconnect between the company/personnel applying for the permit (those familiar with the resources) and those actually completing the construction. Educating the construction side may help raise resource awareness and reduce impacts. A program like this would educate project managers (for the contractor) on why the resources are valuable and must be protected. In turn, contractors would no longer be able to plead ignorance when caught committing a permit violation.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include having less negative impacts to reef and water quality from coastal construction. There would be an

increase in the number of projects that meet the best/highest reef-friendly specifications with better trained companies and professionals. The preservation of the reef ecosystem has long-lasting socioeconomic benefits.

- Some anticipated negative impacts include: (1) difficult, costly, and time consuming to develop, design, and launch and (2) program may not be popular among construction companies and professionals or there might be pushback from the industry for a brief duration. However, this will better incorporate necessary safeguards upfront and may improve the economy of the project (i.e. it is expensive to clean up or mitigate an impact after the fact, when it could have been avoided upfront).
- The program may not positively address the issue (i.e. the only good coastal construction is no construction). Even if the program is implemented, adopting companies may find themselves underbid by non-adopting companies, assuming it will cost more to design and build "green" projects.
- The duration of the benefits of this recommended management action are recurring to provide instruction to the companies and professionals wishing to adopt it.
- If this recommended management action is not implemented decisions will be made by contractors based on bottom dollar without consideration of reef benefits. This will continue to be a big mistake with major impacts to the reef due to a lack of knowledge of existing resources. Also, the risk could be noncompliance from incomplete information or inability to understand specific conditions.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection (FDEP).
- Other potential agencies or organizations who could be involved include the United States Army Corps of Engineers, as well as local municipalities or counties that may only allow certified contractors to apply for permits.
- The key stakeholders for this recommended management action would be coastal construction companies, environmental consultants, and project sponsors, such as counties.
- The legislative considerations include the need for adoption of rule-making procedures if certification were to become mandatory.

Permitting/ Enforcement Requirements:

- There are no permitting requirements with this recommended management action.
- There are no enforcement requirements with this recommended management action.
- A measurable way to show success with this recommended management action is by the reduction in permit violations. There may be more project shut-downs because issues were detected in a timelier manner and addressed. There will also be reduced impacts to reefs and therefore there should be less after-the-fact mitigation required. Other measurable include an increase in green shorelines, dune creation as part of beach renourishment, increase of voluntarily use of "better" standards. These would demonstrate that the program did indeed increase awareness about better practices and coastal construction options and that they are being put in motion.
- Determining if this has reduced impacts to reef resources may be more difficult dependent on the projects and how the improvements may directly or indirectly improve water quality, shoreline stability, coral habitat etc.

Cost:

- The estimated direct cost of implementing this recommended management action, if developed by FDEP staff, may be minimal as it would be to secure facilities to host meetings and then produce the training materials, approximately $10,000 - $30,000. The materials and annual meeting facilities would be a continuous cost, but this could be offset by a fee.
- Regardless if it's voluntary or mandatory, funding may be acquired through a fee that could be assessed to take the training.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 3 - 5 years.

Miscellaneous Info:

- This recommended management action is not linked to any other recommended action.
- Uncertainties or information gaps with this recommended management action were not identified.
- Supporting and relevant data include the following:
    - Best Management Practices for Enhancement of Environmental Quality on Florida Golf Courses 2007, 2009. (2.1 MB) - This 136 page book discusses possibilities for environmental stewardship and pollution prevention at golf courses. It supersedes and expands upon the 1995 BMP document. This new document was written by FDEP.
    - Florida Friendly Guidance Models for Ordinances, Covenants, and Restrictions – (598K) - This manual, a joint Florida-Friendly Landscape document from FDEP and the University of Florida, was just released in January 2009. The book contains two ordinance models addressing nonpoint sources of pollution from landscapes, one of which is more comprehensive and includes water conservation and other issues, and one of which only addresses fertilizer application.
- Best management practices have already been developed for coastal construction under the Southeast Florida Coral Reef Initiative's Maritime Industry and Coastal Construction Impacts focus area Project 6. These could be used as a starting place. The construction industry was included in this development process.
- Currently, Tallahassee is looking at certification for turbidity monitoring and ways to reduce conflict of interest issues.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities: C1 Obj. 7 / FL Priorities C3 Obj. 4 / FL Priorities Goal C Obj. 5.
- SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 4 Goal.

S-101 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Create a training program based on existing Best Management Practices that will be required for coastal construction on-site project contractors to be implemented by January 1, 2020, as required in a coastal construction permit.

Quick Stats:

- Total number of comments on this RMA = 9

Long Responses:

17. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	Required training for contractors should require issuance of a certification. The certification would constitute an environmentally educated contracted & larger fines should be levied to them if inadvertent impacts occur because of negligence.	127	Addressed in RMA
Support	once again education is the key to success. Construction workers are indeed a part of this problem. Workshops to educate contractors/workers would be helpful.	341	Reviewed-no action
Oppose	this seems like a waste of time, money and more process than it's worth. maybe briefing all construction folks (the entire crew that is getting ready to work on the project) on the environment before each project would be a reasonable approach....if you only talk to the managers/contractors they aren't the guys on teh ground on the barge. BMPs are in their permits and construction guidelines making them sit though a class is a waste. it's probably more beneficial to make the on the ground workers care about the environemtn they are in and understand WHY the different rules and practices are in place.	1254	Addressed in RMA.

18. "Other comments or input":

Category	Comment	Ref #	CWG response
Support	Should be VERY IN-DEPTH	**348**	Reviewed-no action
Other	need third party oversight to reduce conflicts of interest	**232**	**NA**
Other	we have to motivate immigrant workers who don't have a clue	**341**	**Inappropriate**

Modified

Title:

S-103: Incorporate existing, and adaptively integrate, Best Management Practices into project design and construction practices to avoid and minimize impacts to coral reefs from coastal construction projects.

Background:

- This recommended management action relates to coral reefs, seagrass, and all near shore and benthic ecosystems in the entire state of Florida.
- This recommended management action is being put forth because contractors have Best Management Practices (BMPs) that are not, but could be, enforced by state permits. Previous and future best management practice lists generated by the state could be incorporated into permit documents, including turbidity issues and technology improvements. At present there is limited, formal guidance for the delineation of best management practices to inform the regulatory process. This recommended management action would prepare a document that would provide such guidance.

Objective:

- The intended outcome of this action is to reduce and eliminate impacts to coral and hardbottom communities and provide more relevant and consistent best practices within the regulatory process. This recommendation focuses on the construction phase of a project and how the contractor performing the work is operating. The output is best management practices incorporated into permit conditions in order to minimize impacts from coastal construction projects.
- BMPs have been created (see Southeast Florida Coral Reef Initiative's (SEFCRI) Maritime Industry and Coastal Construction Impact (MICCI) Project 6), however, they need to be updated and actually required in the permits to be enforceable. There is a need to either reference the entire document in the permit general conditions, or get each respective regulatory agency to do a legal review of each specific best management practice to ensure that it is enforceable by the respective agency, which ultimately would allow them to include the approved BMPs in the special permit conditions.
- This recommendation is to produce a summary document of potentially applicable best management practices for consideration for guidance and possible inclusion within permits. It is acknowledged that the previous MICCI Project 6 will serve as a starting point for this recommendation. Conceivably, the Project 6 document would be reviewed and updated through this action as well.
- This action will work towards minimizing and eliminating impacts such as burials, habitat removal, cable drags, and excessive siltation and turbidity on coral reefs from projects such as beach renourishment and port expansion. It will also address actions to prevent impacts from fuel spills, poor ingress/egress routes, improper discharge of materials, ensure the least impactful equipment is used, that berms are constructed appropriately, and material is deposited appropriately.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include healthier reefs and clearer water during construction. BMPs would eliminate burials, minimize impacts from coastal construction, increase water quality and maintain the ecological

function of the resource, as well as clarifying expectations for the contractor.

- Some possible issues that may arise with implementation of this recommended management action include the increased staff time and additional enforcement needed, which may result in additional cost, and there may be project timelines that need to be extended.
- If this recommended management action is not implemented there will be an inability to require or enforce actions listed in SEFCRI's MICCI Project 6, which could result in an increased likelihood of damage to coastal resources.

Agencies/ Organizations:

- The lead agencies for implementation of this recommended management action would be the Florida Department of Environmental Protection (FDEP) and United States Army Corps of Engineers (USACE).
- Other organizations or key stakeholders who could be involved include project sponsors, divers, beachgoers, the tourism industry, and marine contractors.
- The legislative considerations to take into account include possible rule change at the state level, but, if this were to become a guidance document, it would be consistent with current regulation and no action would be required.

Permitting/ Enforcement Requirements of MA:

- There are no permitting or enforcement requirements for this recommended management action.
- A measurable way to show success with this recommended management action is through a reduced number of incidents during construction and/or reduced impacts to resources; although it is not certain how to show a reduced impact to resources when current impacts to resources are not fully documented.
- Documenting the recommendations from SEFCRI's MICCI Project 6 and Project 4 that are incorporated into permits moving forward may be a way of capturing milestones. Ultimately, if there were a policy put forward by the FDEP to use the Project 6 and Project 4 documents as a guide book, this would also be classified as a milestone.

Cost:

- The estimated direct cost of implementing this recommended management could be $20,000 to $250,000, depending on the need to hire a contractor or use current staff to guide this process. This would be a discrete one-time effort to implement the action.
- Documents already exist that capture much of what this recommended action hopes to achieve. Implementation is largely an issue of staff/resources and time.
- No funding sources have been identified.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 1 - 2 years.

Miscellaneous Info:

- This recommended management action is linked to S-101, since the best practices that would be incorporated into the permits could be reviewed in a certification course for

contractors or projects.

- An uncertainty or information gap with this recommended management action is that it is hard to document and delineate impacts that result directly from coastal construction projects, given the large size of the offshore area, and often there are too many unknowns to make definitive connections. Better oversite coupled with an improved understanding of the offshore environment would help to lessen the uncertainty.
- Supporting and relevant data includes the following documents:
    - http://www.dep.state.fl.us/coastal/programs/coral/reports/MICCI/04/MICCI_04_21_23_24_Phase_2_Report.pdf
    - http://www.dep.state.fl.us/coastal/programs/coral/reports/MICCI/MICCI_6_BMP_Manual.pdf
- Currently these best management practices exist but there is no initiative to formalize them. The FDEP and the USACE are already incorporating certain best management practices in the current permits, but the effort is not consistent.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal C4 Obj. 4.
- SEFCRI LAS MICCI Conservation Goal C / SEFCRI LAS MICCI Issue 1 Goal / SEFCRI LAS MICCI Issue 1 Goal Obj. 1 / SEFCRI LAS MICCI Issue 1 Goal Obj. 2 / SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 4 Goal.

S-103 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Incorporate existing, and adaptively integrate, Best Management Practices into project design and construction practices to avoid and minimize impacts to coral reefs from coastal construction projects.

Quick Stats:

- Total number of comments on this RMA = 9
- Charles T. Berkley Letter
    - Certainly, contractors should be responsible for their actions and there are already laws on the books pertaining to remedial procedures and fines for reef damage and etc. And additional restraints and penalties can easily be incorporated into contracts, as can specific guidelines or procedures. Still, as was the case when the Hillsboro Inlet was widened a few years back, the whole thing ended up as one giant cluster---… One can only hope governmental oversight agencies and the department which draft and

approve such contracts learned from this and have since incorporated these lessons into their policies.
- CWG Response: This comment was reviewed. Contracts aren't enforceable it has to be in the permit to be enforceable. No action.
- and S-102

Long Responses:

19. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	Coastal construction that could impact fragile reefs should require permitting and that permitting needs to be enforceable. If there's no teeth to the bite, I don't have enough faith that everyone would stay in compliance on their own good conscience.	1197	This is related to S-102 this comment is regarding enforcement not the integration of BMP. And is integrated in S-102
Oppose	this seems like yet another report or another document, seems like a waste of time and money if a report/document already exists, just use the document that already exists.	1210	NA
Other	this sounds like it coudl be combined with one of the others about integrating BMPs into things. seems like these overlap and it's a waste of effort to have two different recommendations	1267	Do not want to combine, other BMP RMA has a different focus
Other	should have a focus on north beach in miami beach	283	Will include all SEFCRI region

20. "Other comments or input":

Category	Comment	Ref #	CWG response
Other	Instead of trucking in hundreds of yards of sand, dredging sand from the oven and dumping it on the beaches, spending millions that will just erode again, I believe that all of Florida's east coast counties should invest in creating the largest barrier reef system that will reduce that amount of wave action hitting our shores this insuring our beaches not eroding so quickly. And to think that they would also be creating a new marine habitat to boot!	1122	Not feasible
Other	need regulations not just rely on adaptive management	230	Reviewed-no action

Not modified

Title:

S-104: Set new and appropriate water turbidity standards and support the efforts to improve turbidity monitoring methods for marine construction to limit damage from coastal constructions to reefs and associated habitats.

Background:

- This recommended management action relates to coral reefs and seagrasses in the entire state of Florida.
- This recommended management action is being put forth because of the damage to corals caused by high turbidity and silt deposits during construction work. The current turbidity standard may not be effectively minimizing resource impacts caused by sedimentation and high turbidity in the water column resulting from coastal construction projects. The current standard of 29 Nephelometric Turbidity Units (NTU) above background is too high. Even the special standard of 15 NTU above background that's been used near sensitive coral reefs in the southeast Florida area (see Maritime Industry and Coastal Construction Impact Local Action Strategy 4 Phase 2 report) seems excessive for some species of corals.

Objective:

- The intended outcome of this action is to set a new Florida limit of 10 NTU for construction in or adjacent to submerged resources of ecological significance that are sensitive to turbidity and/or sedimentation. This water quality standard should be based on scientific literature and monitoring data and observations from past coastal construction projects to provide assurance that resources will not be impacted by turbidity and siltation generated by coastal construction projects. Also, a better monitoring methodology, such as in situ /real time, and more frequent monitoring should be required.
- Any expansion of mixing zones should be justified by monitoring data or modeling. If a larger mixing zone variance request is approved, even if there is a lower NTU, it may negate the protection provided by the lower NTU standard. (Note: If a mixing zone extension is approved, the Florida Department of Environmental Protection (FDEP) considers the ecological value of the resources in the expanded zone and considers the area to be a direct impact in compensatory mitigation determinations.)

Intended Benefits and/or Potential Adverse Effects:

- A benefit of implementation of this recommended management action includes a new science-based turbidity standard that will minimize damage to benthic organisms caused by elevated (relative to background) turbidity and sedimentation/siltation during construction. This recommended management action proposes to minimize the possibility of more environmental disasters similar to the one caused by the Port of Miami expansion in 2014.
- A science-based turbidity standard will provide regulatory agencies with reasonable assurances that impacts to resources will be minimized to the maximum extent practicable. Minimization of impacts to coastal resources from project-related turbidity and sedimentation/siltation will aid in maintaining the ecological functions and economic benefits provided by those resources. This will result in better protection of these resources, improved recreational attraction to tourists, and maintenance of functional larval and juvenile habitats, which support the fishing industry.

- Some anticipated negative impacts associated with this recommended management action include mixing zones for projects would likely need to be expanded and may extend over coral reef and seagrass resources if the turbidity limit (NTUs) is reduced. As a result, additional mitigation for significant adverse impacts and sedimentation monitoring would likely be required, which would increase the cost of construction projects. A dredge may also need to slow its production rate or move a greater distance away from the resource to allow turbidity levels to drop below the NTU standard, both of which could increase the duration of construction and project costs.
- The duration of the benefit of this recommended management action is a discrete one-time rule change with long-lasting benefits. While project-related turbidity from many projects is often temporary, turbidity can be elevated for a prolonged period of time. Furthermore, areas subject to multiple/repeat projects may experience cumulative effects of elevated turbidity. Higher water quality standards (lower NTU limits) may better protect resources from effects caused by prolonged or chronic exposure to elevated turbidity.
- If this recommended management action is not implemented damage to coral reefs will occur each time a coastal construction project is conducted.

Agencies/ Organizations

- The lead agency for implementation of this recommended management action would be the FDEP.
- Other potential agencies or organizations who could be involved include the United States Environmental Protection Agency.
- The key stakeholders for this recommended management action would be any stakeholders involved in coastal construction activities (including permittees and regulatory agencies).
- The legislative considerations to take into account include the current rule stating that turbidity must be less than or equal to 29 NTUs above background. This recommended management action may require a rule change to implement a higher standard (lower NTUs) or alternative turbidity standard (total suspended solids) on a project-by-project basis depending upon the resources within the project area and their relative tolerance (resistance and resilience) to turbidity and sedimentation.

Permitting/ Enforcement Requirements of MA:

- There are no permitting requirements for this recommended management action.
- Enforcement requirements for this recommended management action include compliance efforts that are consistent with current procedures.
- A measurable way to show success with this recommended management action is enactment into law of 10 NTU limit. The effectiveness of this recommendation could be measured by reviewing the results of biological monitoring reports submitted in compliance with coastal construction permits. A reduction in turbidity-related stress and lower sedimentation on benthic organisms would be a measureable outcome indicating the success of this recommended management action.

Cost:

- There is no estimated direct cost of implementing this recommended management action because rule changes do not require funding.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 2 - 5 years.

Miscellaneous Info:

- This recommended management action is linked to S-106.
- Some uncertainties or gaps can be addressed by additional research establishing the turbidity thresholds because it is not certain that a limit of 10 NTUs will be low enough. It would be helpful to know the relative resilience and resistance of various marine communities to turbidity and sedimentation. Multiple factors need to be considered including the magnitude (NTUs) and duration (persistence) of turbidity. Alternative parameters such as suspended solids or sediment deposition might better reflect the direct aspects of stress to corals. An absolute ceiling level of turbidity should also be incorporated into the standard (in addition to an 'above baseline' threshold). Moreover, a comprehensive literature review of turbidity related impacts on benthic marine communities will likely be required to justify a change in the current water quality standard. Alternative measurements of water quality (e.g., total suspended solids) should potentially be considered in addition to assessing the appropriate turbidity standard (NTUs).
- Supporting and relevant data includes the following:
    - Erftemeijer, P. L., Riegl, B., Hoeksema, B. W., & Todd, P. A. (2012). Environmental impacts of dredging and other sediment disturbances on corals: a review. *Marine Pollution Bulletin*, 64(9), 1737-1765.
    - Erftemeijer, P. L., & Lewis, R. R. R. (2006). Environmental impacts of dredging on seagrasses: a review. *Marine Pollution Bulletin*, 52(12), 1553-1572.
    - Pollock, F. J., Lamb, J. B., Field, S. N., Heron, S. F., Schaffelke, B., Shedrawi, G., Bourne, D. G., Willis, B. L. (2014). Sediment and turbidity associated with offshore dredging increase coral disease prevalence on nearby reefs. PLOS ONE, 9(7).
    - Flores, F., Hoogenboom, M. O., Smith, L. D., Cooper, T. F., Abrego, D., Negri, A. P. (2012). Chronic exposure of corals to fine sediments: lethal and sub-lethal impacts. *PloS one*, 7(5).
    - Rogers, C. S. (1990). Responses of coral reefs and reef organisms to sedimentation. *Marine ecology progress series. Oldendorf*, 62(1), 185-202.
    - Sheridan, C., Grosjean, P., Leblud, J., Palmer, C. V., Kushmaro, A., & Eeckhaut, I. (2014). Sedimentation rapidly induces an immune response and depletes energy stores in a hard coral. *Coral Reefs*, 33(4), 1067-1076.
    - http://link.springer.com/article/10.1007/s00338-014-1202-x.
    - There seems to be only one paper describing the effects of high turbidity in laboratory conditions, namely:
        - Telesnicki, G. J., & Goldberg, W. M. (1996). Effects of turbidity on the photosynthesis and respiration of two south Florida reef coral species. Oceanographic Literature Review, 2(43), 199.
        - Researchers in this study observed no effects with turbidity levels of 7-9 NTU and measurable effects with levels of 14-16 and 28-30 NTU.
    - Dr. Bob Richmond (Hawaii) has a manuscript coming out that synthesizes all of the known sediment/turbidity thresholds for corals. It will be a stop light style matrix that includes 3 types of data: 1) Sedimentation Rate, 2) Turbidity/Suspended

Sediment Concentration, and 3) Sediment Accumulation as Depth.
    - United Nations Environment Programme and PIANC report "Dredging and port construction around coral reefs" http://www.unep-wcmc.org/system/dataset_file_fields/files/000/000/099/original/2010_PIANC_Dredging_and_port_construction_around_coral_reefs_Report_108-2010_FINAL_VERSION_LowRes.pdf?1398441422
    - Hawai'i has turbidity standards that may be of interest:
        - http://health.hawaii.gov/cwb/files/2013/04/Clean_Water_Branch_HAR_11-54_20141115.pdf.
- Currently differences between project type, equipment, and resources all impact the scenario, so we support a case-by-case approach based on the coral reef resources present. Increasingly, FDEP is already doing this in permit conditions and requiring lower turbidity standards to trigger additional sedimentation monitoring and specific conditions which require the dredge to stop dredging and move to a greater distance from the reef resources until accumulated sediment levels return to background conditions. This should be pursued by the regulatory agencies in the interim while a more stringer water quality standard is developed. Currently, there is a turbidity monitoring working group that should be contacted in regards to this recommendation.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal C1 Obj. 1.
- FDEP CRCP Coral Reef Ecosystem Conservation Goal C.
- SEFCRI LAS MICCI Issue 1 Goal, Obj. 1 / SEFCRI LAS MICCI Issue 1 Goal, Obj. 2.

S-104 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Set new and appropriate water turbidity standards and support the efforts to improve turbidity monitoring methods for marine construction to limit damage from coastal constructions to reefs and associated habitats.

Quick Stats:

- Total number of comments on this RMA = 11

Long Responses:

21. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Oppose	This is ridiculous 10 NTU .... the existing water is almost certainly not that clear. Ridiclous	707	Water is usually less than 3 NTU. Not correct info
Other	This sounds like it would help the reef but only if the mixing zones were not increased. Right now, we still have the same old turbidity standers and they are still increasing the mixing zones so we are going in the wrong direction. Expanding the mixing zones does not help the reefs. The mixing zone should be made smaller.	1069	Already addressed in the RMA
Other	I don not. Cost of maintenance of inlets is too high now	32	Reviewed-no action
Other	Contact US Army Corp for comments & cost factors	43	NA

22. "Other comments or input":

Category	Comment	Ref #	CWG response
Other	No expanding of mixing zone.	1069	**Already addressed in the RMA**
Other	ask for input from USACOE	32	**Already provided input from USACOE**
Other	and need more 3rd party oversight to reduce conflict of interest and cheating	229	**NA**

Not modified

Title:

S-106: Establish an educational turbidity monitoring certification to improve the quality of turbidity data that are used to evaluate project-related threats to resources.

Background:

- This recommended management action relates to sediment on hardbottom and coral reefs in the entire state of Florida.
- This recommended management action is being put forth because turbidity data are currently collected by many individuals with various levels of experience and expertise. Collection of data by inexperienced, untrained individuals results in uncertainty regarding the quality of such data and usefulness for evaluating project-related impacts on resources.

Objective:

- The intended outcome of this action is to increase the number of trained and certified individuals that will conduct turbidity monitoring for coastal construction projects, resulting in more accurate data on project-related turbidity, by establishing an educational turbidity monitoring certification. This certification training would be preferred but not mandatory, initially, and the benefits received during the permitting process would encourage the applicant to choose 'Florida Department of Environmental Protection (FDEP)-certified' turbidity monitors over non-certified. Some of the benefits include:
    - Prequalified monitoring personnel would not need to submit qualifications during the permitting process.
    - Best Management Practices for the process/technique of collecting samples in the turbidity plume.
    - Both federal and non-federal projects will be able to require that turbidity monitoring personnel are FDEP-certified, even though this will not be a mandatory FDEP requirement. United States Army Corps of Engineers will be able to incorporate this in their contracts similar to the current 'National Marine Fisheries Service observer certification' requirement, as long as there is physical proof of the training.
    - This approach does not require legislative approval initially. It avoids legal challenges and solves the underlying problem, as well as serve as a stepping stone for a certification program if required in the future.

Intended Benefits and/or Potential Adverse Effects:

- Trained and certified individuals will conduct turbidity monitoring for coastal construction projects, which will result in more accurate data on project-related turbidity. Accurate data on project-related turbidity will result in a better understanding of potential project-related impacts resulting from turbidity, which will result in better protection for water resources.
- Benefits of implementation of this recommended management action include training that may result in more effective turbidity monitoring, which could save monitoring crews time in the field and result in cost-savings to permittees and taxpayers.
- Anticipated negative economic impacts associated with this recommended management action include regulatory agencies needing to invest time and money in order to establish the certificate program and to continually offer courses. Monitoring firms may also need to spend time and money to ensure their employees receive the training and are certified

so that they remain competitive.
- The duration of the benefits of this recommended management action is ongoing and shall have long-term benefits.
- If this recommended management action is not implemented, the quality of turbidity data would remain questionable and impacts to resources may result.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the FDEP.
- Other potential agencies or organizations who could be involved were not identified.
- The key stakeholders for this recommended management action would be any stakeholder involved in coastal construction activities (including permittees, monitoring companies and regulatory agencies).
- Certification is normally done by the Board of Professional Regulation (Florida Department of Business & Professional Regulation) or a professional society. However, since this is creating a voluntary program, it does not require legislative approval.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements for this recommended management action.
- Enforcement requirements for this recommended management action include those that are currently in place to review permit compliance reports.
- Means of demonstrating success of this recommended management action include tracking the number of individuals certified and the number of compliance issues regarding improper turbidity monitoring. Certification course participants could be given a pre-test to determine their knowledge of turbidity monitoring prior to the training and could be reassessed upon course completion to determine the effectiveness of the training.

Cost:

- The estimated direct cost of implementing this recommended management action was not identified. However, regulatory agencies will need to invest time and money to establish the certificate program and continually offer courses.
- Funding may be acquired through the FDEP or other regulatory agencies.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years, with the voluntary program starting as soon as possible, followed by the mandatory certification.

Miscellaneous Info:

- This recommended management action is linked to S-104.
- Some uncertainties or gaps with this recommended management action include the following: (1) the cost to develop the course, (2) the inability of the course to pay for itself (the small size of the turbidity monitoring industry means that not enough people would be getting certified or paying for certification for the course to be sustainable), (3) the legal liabilities for both the entity/person being certified and the entity doing the certification, (4) certifications need to be tracked, thus individuals who would be tracking the certifications need to be identified, (5) the certification tracking process needs to be

identified, (6) who would be conducting the testing still needs to be identified, (7) what exactly would testing entail, (8) policing would be required to ensure that certification standards continue to be met, (9) who would set certification standards still needs to be identified, (10) who would monitor compliance with those standards and who would have the authority to enforce those standards is still unknown, and (11) non-compliance would require decertification, which would bring legal challenges for the enforcing entity.

- Suggestions were made to incorporate other training needs (e.g. sea grass or benthic habitat monitoring) into one training program in order to increase the feasibility of moving forward with mandatory certification at this time. While it is a good endeavor to have FDEP certification for all monitoring activities, there is a danger in increasing the scope of this training program such that the more charismatic issues may eclipse the turbidity monitoring issues, or such that the roll out of this training program is pushed further into the future. The industry is also highly specialized, in that most turbidity monitoring personnel rarely monitor benthic habitat and vice versa, so a combined program geared towards turbidity monitors may be counter-productive if training for other monitoring disciplines are included.
- Currently, a Turbidity Monitoring Working Group exists and is addressing much of the content of this recommended action. After careful analysis, the Turbidity Monitoring Working Group decided that, since the problem was primarily the lack of understanding/guidance about how to monitor correctly, a training (without professional certification) program could be the solution. Consequently, FDEP received the buy-in from the major players in the turbidity monitoring industry with regards to a voluntary certification (training) program and discussions are currently underway.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal C1 Obj. 1 / FL Priorities Goal C4 Obj. 4
- SEFCRI LAS MICCI Conservation Goal C / SEFCRI LAS MICCI Issue 1 Goal / SEFCRI LAS MICCI Issue 1 Goal Obj. 1 /SEFCRI LAS MICCI Issue 1 Goal Obj. 2 / SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 4 Goal

S-106 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Establish an educational turbidity monitoring certification to improve the quality of turbidity data that are used to evaluate project-related threats to resources.

Quick Stats:

- Total number of comments on this RMA = 5

Long Responses:

23. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	turbidity is a huge problem during beach renourishemnt projects	120	Reviewed-no action
Support	stop dumping sand in the ocean to solve the problem	169	NA

24. "Other comments or input":

Category	Comment	Ref #	CWG response
Other	must increase 3rd party oversight and lower contractor conflict of interest.	228	Reviewed-no action

modified

Title:

S-108: Revise/create Uniform Mitigation Assessment Method for coral reef environments to improve application of this rule to coastal ecosystems, to provide more consistent/accurate calculations, and to ensure ecological functions are maintained.

Background:

- This recommended management action relates to the entire state of Florida and is relevant to all habitats, but is most applicable to hardbottom, coral reefs, and submerged aquatic vegetation.
- This recommended management action is being put forth because the Uniform Mitigation Assessment Method (UMAM) rule that is currently used for coastal ecosystems was designed for freshwater wetlands. Thus, there is a lack of consistency with the application of this rule, and resulting differences in calculations between regulatory agencies and other stakeholders that use the rule have been identified as a problem. The rule revision will generate a worksheet developed specifically for coastal ecosystems and a guidance document will be prepared to facilitate the application of this new UMAM worksheet for coastal ecosystems, including coral reef, hardbottom and associated habitats such as seagrass.

Objective:

- The intended outcome of this action is to ensure more consistent and accurate mitigation calculations by various regulatory agencies and stakeholder groups, thereby ensuring that functions provided by coastal ecosystems are maintained. Additionally, the UMAM process will be more transparent to the public and data on UMAM calculations for permitted projects will be more readily available for review by regulatory agencies.
- The use of a worksheet with specific questions will hopefully facilitate conversations between regulatory agencies and applicants and enable UMAM discussions for projects to be more constructive. Instead of debating whether the water environment is a 7 or an 8, discussions will be able to focus on specific attributes of the assessment area that are related to its ecological functions

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include the potential for a more efficient process (after an initial learning curve) and a better understanding of calculations by the public, which may lead to a more positive perception of UMAM in general.
- Some possible issues that may arise with implementation of this management action include an initial learning curve for users adjusting to the new UMAM rule and training that will be required to bring everyone up-to-speed. Regulatory agencies will need to invest time into development, testing, training, implementation, and enforcement of the new rule.
- The duration of the benefits of this recommended management action is long term.
- If this recommended management action is not implemented, the UMAM rule currently used for coastal ecosystems will continue to apply. Inaccuracy and inconsistency in mitigation calculations may compromise the maintenance of ecosystem functions provided

by coastal habitats.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection (FDEP).
- Other potential agencies or organizations who could be involved include local regulatory agencies, such as the water management districts involved in the implementation of this rule revision.
- The key stakeholders for this recommended management action would be any stakeholders involved in coastal construction activities (including permittees and regulatory agencies).
- There were no legislative considerations to take into account with this action.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements for this recommended management action.
- There are no enforcement requirements for this recommended management action.
- A means of demonstrating success of this recommended management action is the consistency of UMAM scores between regulatory agencies and groups of individuals, which can be measured. Success will have been achieved when mitigation acreage calculations are comparable to the previous UMAM, and the consistency of scores between users has improved. Additionally, the new web-based user interface for UMAM will allow for better data management, make the UMAM process more transparent, and make UMAM data more readily available and easier to query and analyze.

Cost:

- The estimated direct cost of implementing this recommended management action is very little because it would be done in-house by FDEP.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- This recommended management action is linked to N-117 to revise reef mitigation processes for permitted and non-permitted activities.
- Some uncertainties or gaps with this recommended management action include needing additional information regarding the best way(s) to structure a quantitative worksheet in order to capture the ecological functions of assessment areas. Additional information regarding how to capture the functional loss associated with various types of coastal construction projects and the functional gain provided by different types of mitigation activities would inform the UMAM revision process.
- Supporting and relevant data includes the following:
    - Chapter 62-345, F.A.C. the Rule which governs UMAM, as well as 373.414., F.S.
    - The ecosystem services group referred to is "A Community on Ecosystem Services (ACES)":
        - http://www.conference.ifas.ufl.edu/aces/

- "NESP's guidebook":
  - https://nicholasinstitute.duke.edu/focal-areas/online-guidebook#.VdH1p7VRHIW .
- Examples of BMPs:
  - https://nicholasinstitute.duke.edu/ecosystem/publications/best-practices-integrating-ecosystem-services-federal-decision-making#.VdH2C7VRHIU .

- Currently, FDEP is revising the UMAM for coastal ecosystems. A worksheet for hardbottom and coral habitats is being developed. A workgroup of stakeholders from various regulatory agencies and other interested parties, including local governments and monitoring firms, has been asked to review the worksheet and provide comments. Comments will be used to amend the worksheet to ensure optimal functionality prior to the distribution of a draft rule. Once a rule is drafted, it will be made available for public comment. Constructive feedback received from the public can be used to further refine rule language and worksheets at that time. In addition to the UMAM worksheet, the FDEP aims to develop a guidance document, which should provide instructions for assessing time-lag and risk for marine ecosystems to ensure that these parameters are appropriately and consistently applied in UMAM and, in turn, correctly calculate the amount of mitigation needed to compensate for impacts.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal C4 Obj. 4.
- FDEP CRCP Coral Reef Ecosystem Conservation Goals A4 Obj. 3.
- SEFCRI LAS MICCI Issue 1 Goal Obj. 1 / SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICCI Issue 3 Goal / SEFCRI LAS MICCI Issue 3 Goal Obj. 3.

S-108 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Revise/create Uniform Mitigation Assessment Method for coral reef environments to improve application of this rule to coastal ecosystems, to provide more consistent/accurate calculations, and to ensure ecological functions are maintained.

Quick Stats:

- Total number of comments on this RMA = 6

Long Responses:

25. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	Sounds like a good idea but I don't understand why an RMA is needed for this as the entire matter is under the DEP control and they could implement it tomorrow if they wanted to.	1214	Reviewed-no action

26. "Other comments or input": NONE

Category	Comment	Ref #	CWG response

Modified

Title:

S-116: Maintain the ecological function of the wrack line by reducing beach raking practices.

Background:

- This recommended management action relates to Miami-Dade, Broward, Palm Beach, and Martin counties, as well as the shore and nearshore communities, the littoral zone, beach communities, hardbottom, coral reefs, and the dune systems.
- This recommended management action is being put forth due to current beach management practices that may not be maintaining the slope of the beach and dune system as effectively as possible and, since sand is expensive, there is a need to do the best job possible of keeping it where it is placed to minimize recurrence with beach raking activities.
- The problem of beach raking and wrack removal is that it sterilizes the beach and creates a homogeneous environment, as well as exposing sand to increased erosion. With the removal of the wrack line and other natural debris on the beach there is a decrease in habitats, food sources, and biodiversity on the beach.

Objective:

- The intended outcome of this action is to maintain the ecological function of the wrack line by reducing beach raking practices. Improving the ecological function of the wrack line will improve resilience, fisheries habitats, and soil and sediment control. This recommended management action also aims to provide education about wrack lines to the community, and produce a guidance document for beach management activities that would minimize beach erosion and loss of material from shore. This document would include guidance for raking and dune construction with objectives including reduced need of nourishment projects and a more sustainable beach, due to decreased sand loss.

Intended Benefits and/or Potential Adverse Effects:

- Some potential benefits with implementation of this recommended management action include: (1) maintaining the beach and increasing the intervals between beach renourishments, (2) minimizing impacts to near shore resources, (3) a reduction in state and county expenses for beach maintenance, (4) increased biodiversity along the shoreline, (5) decreased beach erosion, and (6) providing a valuable source of nutrients for coastal flora and fauna, including migratory bird species.
- Some potential disadvantages associated with this recommended management action include: (1) a change in state and county procedures which involves staff time and altered contracts/permits, (2) there may be difficulty convincing people and municipalities of the importance of the wrack line, therefore difficulty in implementing strategies to leave it in place, (3) by not raking the beach, there may be an increase in complaints and a decrease in desire of beachgoers to use the beach, (4) beachgoers may see the wrack line as an eyesore, (5) it's impossible to ban racking activities entirely, and (6) economic input is not considered in this action which may be a negative.
- There are no anticipated negative environmental impacts.
- The duration of the benefits of this recommended management action is long term.
- If this recommended management action is not implemented there is a possibility of increased beach erosion leading to more frequent renourishment projects and thus an increased overall cost.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection, since the Coastal Construction Control Line gives permits to the beach rakers.
- Other potential agencies or organizations who could be involved include Florida Fish and Wildlife Conservation Commission, cities, and counties.
- The key stakeholders for this recommended management action would be beachgoers and coastal residents.
- There are no legislative considerations to take into account for this recommended management action.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements associated with this recommended management action. However, this proposed action recommends that the Coastal Construction Control Line permit be amended or a condition added to reduce raking frequency and raking in environmentally sensitive areas. There should also be a switch from mechanical to hand raking, though this would increase costs. Additionally, this proposes that a seasonal ban be put in place except in areas of high use.
- This recommended management action would require enforcement action if raking guidelines are not followed.
- A way to provide a means to measure the success of this recommended management action includes the frequency of beach projects and an increase in shorebird presence.

Cost:

- The estimated direct cost of implementing this recommended management action is dependent on the scale of implementation.
- Potential funding could be acquired through the county or municipality that owns the beach, as they should bear the cost of the raking itself. The development of the project could be by the Florida Department of Environmental Protection or a multi-county workgroup.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- Some uncertainties or gaps with this recommended management action include: (1) there have been no studies to prove the claim that seaweed on the beach actually reduces erosion, (2) this recommended management action would only help reefs if in fact it does reduces erosion. If more beach renourishment is necessary and, in fact, raking causes erosion, it could be important, (3) a list of beaches that are DO NOT RAKE beaches needs to be created, and (4) not really sure what happens to the wrack if its left alone or in place.
- Supporting and relevant data includes the following:
    - Nordstrom, Karl F., Reinhard Lampe, and Lisa M. Vandemark. "Reestablishing naturally functioning dunes on developed coasts." *Environmental Management* 25.1 (2000): 37-51. http://link.springer.com/article/10.1007/s12237-011-9375-9/fulltext.html

    - Colombini, I., et al. "Temporal and spatial use of stranded wrack by the macrofauna of a tropical sandy beach." Marine Biology 136.3 (2000): 531-541.
    - Patterson, Michael E., James D. Fraser, and Joseph W. Roggenbuck. "Factors affecting piping plover productivity on Assateague Island." *The Journal of wildlife management* (1991): 525-531.
    - Bouchard, Sarah S., and Karen A. Bjorndal. "Sea turtles as biological transporters of nutrients and energy from marine to terrestrial ecosystems." *Ecology* 81.8 (2000): 2305- 2313.
    - Florida Beach and Shore Preservation Act http://www.leg.state.fl.us/Statutes/index.cfm?App_mode=Display_Statute&URL=0100- 0199/0161/0161.html

- Currently the following has been occurring:
    - Marco Island beach – Beach rake must stay at least 15 feet from dune line and 15 feet from the wrack line.
    - Palm Beach County has been active in developing living shorelines along publicly-owned property. Their approach could be expanded to other parts of southeast Florida.
        - Thirty years ago, Palm Beach County tried to ban beach cleaners. However, property owners that lived on the beaches did not like seaweed that would remain on them, even though there was effort made to educate people.
        - Palm Beach County does have seasonal bans on raking. Raking is allowed but it cannot occur where there are sea turtle nests. This is a practical ban not a regulation, but parks departments and sea turtle monitors can't facilitate raking activities. There is a coastal construction ordinance stating that sea turtle monitors have to clear the beach before the beach raker can work. In Ocean Reef Park North this a defacto ban.
        - Some towns were able to activate bans. Each raker has to have a specific permit, but territory changes on a monthly basis.
        - Palm Beach County has Best Management Practices in place but they are hard to implement. Years ago, it was the job of lifeguards job to rake the weed line.
    - Miami-Dade County parks wracks the entire beach. They run over it and bury it a little.
    - Broward County uses city contractors to rake in some parks.
    - Martin County has rules for wrack line - Jupiter Island has no raking. Look at "adopt-a-beach" project, no wrack removal in Martin County.
    - In Massachusetts, there's a restriction on when beach raking can take place to provide a food source for endangered or threatened migratory birds.
- Sea oats have been found to be most effective to hold vegetation, which is a natural way to sustain beaches along with enhancing the dune line. Hand raking may help keep some ecological functions.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- Goals and Objectives were not identified within this recommended management action.

S-116 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Maintain the ecological function of the wrack line by reducing beach raking practices.

Quick Stats:

- Total number of comments on this RMA = 7

Long Responses:

27. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	This will help the reef and beaches	1415	Reviewed-no action

28. "Other comments or input": NONE

Category	Comment	Ref #	CWG response

Not modified

Title:

S-120: Improve management and maintenance activities of beaches to reduce impacts to coral reefs (including nearshore reefs), make beaches more sustainable, and minimize need for future renourishment projects.

Background:

- This recommended management action relates to the coral reefs near beaches and nearshore hardbottom habitat, such as worm reefs, primarily in Miami-Dade, Broward, Palm Beach, and Martin counties, although it may be applicable statewide.
- This recommended management action is being put forth because there are many associated issues with the deposition of sediments on or near nearshore environments during and after beach nourishment projects. This includes impacts from turbidity and siltation, as well as direct burial of resources.
- This action will address uncoordinated efforts between cities/counties resulting in reef damage. If all standards must be met then it will not matter that a project crosses or is adjacent to a county boundary. An example of this is if all projects are required to have dunes then a project that may span a county line or municipality line will not have dunes on one side and no dunes on the other.

Objective:

- The intended outcome of this action is the need for fewer nourishment projects and reduced impacts to resources through better beach maintenance (through better project design and improved maintenance between projects). This would be in conjunction with other beach management plans, which may be based on sand cells or other engineering or municipality plans. The plan would include the following, several actions to reduce impacts:
    - Better management/maintenance of the existing sand and beach habitat including eliminating, reducing, or improving raking practices on beaches that are state or federally funded in order to extend lifetime of beach project and reduce impact to resources through siltation.
    - Best Management Practices such as improve sand standards including grain size and percent fines (recommend 3% fines). In areas that have nearshore hardbottom in closer proximity make those requirements or standards tighter: find a way to filter silt before placing material on the beach.
    - It is understood that equilibrium toe of fill is a construct of the permitting process and that, realistically, there is no guarantee where the sand will settle. However, lessons learned should take into account past projects that have exceeded the anticipated equilibrium toe of fill and then err on the side of caution and assume that the maximum impact will occur.
    - Identify existing beach erosion issues that are created by stormwater runoff and require municipalities or relevant entities that are receiving state or federal assistance to retrofit/fix those issues before additional beach projects will be undertaken.
    - Require dune creation and stabilization of those dunes through planting.
    - Require appropriate methods of placing material on the beach by constructing berms and retention areas to let the material settle.
    - Submerged breakwaters may be appropriate in some areas such as hot spots.

Bypassing, such as constructing bypass stations or a moveable dredge, would help with this.
    - Bypassing should have contingency plans for when there is excess material in the system (e.g. Hurricane Sandy). A plan should be in place to move material elsewhere rather than force it through the system, resulting in burial of nearshore habitat.
    - The state requires that sand that is beach quality be placed on the adjacent eroded beach during a dredge project. However, for federally maintained channels that are maintenance dredged, if it is more cost effective to put offshore than on beach, then the United States Army Corp of Engineers (USACE) is required to do so and therefore the cost goes back to state, or local community. So it must be required that the state or local communities cover that cost difference.
    - Retreat of infrastructure, while not a main priority at this time, should be considered and worked towards.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include reduced burial, turbidity, and sedimentation over nearshore reefs due to best practices during project management and less nourishment events because of beach maintenance. There will be increased areas for shorebirds and turtles. Additionally, this will result in natural shoreline stabilization, protection of Essential Fish Habitat for early life history stages of species managed under the snapper-grouper complex and spiny lobster fishery management plans, and protection of foraging and resting habitat for marine turtles.
- There will also be better water quality conditions for beachgoers, increased opportunities for recreational fishing, and better nearshore reefs for diver/snorkelers, all of which will increase tourism. Also, longer-lived projects will reduce the cost to taxpayers.
- An anticipated negative impact associated with this recommended management action is that sand characteristics, which would maximize the life and minimize the turbidity of a beach project, could be in conflict with the characteristics needed by nesting sea turtles. Beach projects would become more expensive as additional verification of sand sources may be required, such as additional cores, or if fines are reduced, may need to look elsewhere for sand sources. Monitoring costs could increase. There may be less beach for tourists if part of the footprint is dune.
- The duration of the benefits of this recommended management action is intermittent for each nourishment event.
- If this recommended management action is not implemented, the turbidity impacts to nearshore coral reefs that are already occurring would continue, as would the impacts to nearshore water quality. Not implementing this action would result in the continued reduction in quantity and quality of nearshore hardbottom habitats in the southeast Florida area, which could create a demographic bottleneck for coral reef fishes that use nearshore hardbottom for settling and early life history stage habitat.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action would be the Florida Department of Environmental Protection (FDEP) and USACE.
- Other potential agencies or organizations who could be involved include National Oceanic

and Atmospheric Administration (NOAA), Florida Fish and Wildlife Conservation Commission, United States Fish and Wildlife Service, and county/city/project sponsors that are responsible for the actual individual construction projects.

- The key stakeholders for this recommended management action would be county governments, non-governmental organizations (NGOs) - sea turtle groups (for or against, depends on the grainsize issues), coral reef groups, dive industry, and the tourism industry.

Permitting/ Enforcement Requirements of RMA:

- There are no permitting requirements for this recommended management action.
- There are no enforcement requirements for this recommended management action.
- A measurable way to show success of this recommended management action would be with pre- and post-nourishment benthic surveys, along with annual monitoring requirements to assess coral and hardbottom condition becoming part of the permit. Success should also be reviewed after major storm events, such as hurricanes. Results should be apparent within 1 - 2 years, but may be monitored up to 5 years, and a reduced number of beach projects or increased longevity of beaches would indicate success.

Cost:

- The estimated direct cost of implementing this recommended management action to develop the plan would require a dedicated staff position or contractor and therefore $100,000 - $250,000. This would provide for an unbiased third party to come in and organize the effort.
- Potential funding could be acquired through the state legislature via FDEP or NOAA cooperative grant funding, NGOs, or USACE Research and Development sources.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 5 years to develop and implement, but then continually as work to implement each beach project goes forward and agreements are reauthorized.

Miscellaneous Info:

- This recommended management action is not linked to any other proposed recommended management action.
- Some uncertainties or gaps with this recommended management action include the grain size and percent fines which need to be set.
- Supporting and relevant data includes the following:
    - http://www.dep.state.fl.us/beaches/publications/pdf/EFNHBE.pdf
    - Telesnicki & Goldberg paper: Telesnicki, G., and Goldberg, W., 1995. Effects of turbidity on the photosynthesis and respiration of 2 South Florida reef coral species. Bulletin of Marine Science, 57, 527–539.
    - Rogers, C. S., 1983. Sublethal and lethal effects of sediments applied to common Caribbean reef corals in the field. Marine Pollution Bulletin, 14, 378–382.
    - Marszalek, D. S., 1981. Impact of dredging on a subtropical reef community, Southeast Florida, U.S.A. In Proceedings of Fourth International Coral Reef Symposium, Manila, Philippines. Vol. 1, pp. 147–153.
    - Dodge, R. E., and Vaisnys, J. R., 1977. Coral populations and growth patterns:

responses to sedimentation and turbidity associated with dredging. Journal of Marine Research, 35, 715–730.
    - Encyclopedia of Modern Coral Reefs: Structure, Form and Process: David Hopley, 2010.
    - Impacts of Sedimentation on Coral Reefs, Michael J. Risk, Evan Edinger, pp. 575-583 [links: http://link.springer.com/referenceworkentry/10.1007%2F978-90-481-2639-2_25#;
    - https://books.google.com/books?id=5umXDDmqxwIC&pg=PA577&lpg=PA577&dq=Telesnicki,+Goldberg+sedimentation+coral+paper&source=bl&ots=u8Ew0lI973&sig=lbyWI3yVC_gyJ6xeXUsp6XRF2I&hl=en&sa=X&ei=mU-7VNLgHoGJNpOGggC&ved=0CEsQ6AEwBw]
    - Junjie RK, Browne NK, Erftemeijer PLA, Todd PA (2014) Impacts of Sediments on Coral Energetics: Partitioning the Effects of Turbidity and Settling Particles. PLoS ONE 9(9): e107195. doi:10.1371/journal.pone.0107195
    - "Ecological function of nearshore hardbottom habitat in East Florida: a literature synthesis http://www.dep.state.fl.us/beaches/publications/pdf/EFNHBE.pdf
- Broward and Miami-Dade have county-wide plans, Palm Beach County does not. Neither Broward nor Miami-Dade have dune features in their current federal authorization. Both counties have elected to build dune features at 100% local cost where the beach is wide enough to support a dune feature. During reauthorization, Miami-Dade and Broward counties will be/should be required to include a dune feature. Also, Palm Beach and Martin counties should require dune features.
    - Each beach maintenance project has its own plan; some are federal projects, while others are local projects. Each has a permit that requires the identification of appropriate sand sources prior to construction. Each permit has a specific condition requiring certain construction practices that will minimize turbidity and keep it within acceptable limits.
    - Hot spot projects are underway and have been successful in Miami-Dade County.
    - Some inlets already have bypass stations.
    - The FDEP currently identifies areas of critical beach erosion and has developed a strategic beach management plan to address these areas.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal C3 Obj. 4 / FL Priorities Goal C4, Obj. 3,4, 5 / FL Priorities Goal A1 Obj. 3.
- FDEP CRCP Coral Reef Ecosystem Conservation Goal C / FDEP CRCP Coral Reef Ecosystem Conservation Obj. 5.
- SEFCRI LAS MICCI Issue 1 Goal Obj. 2 / SEFCRI LAS MICCI Issue 2 Goal.

S-120 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Improve management and maintenance activities of beaches to reduce impacts to coral reefs (including nearshore reefs), make beaches more sustainable, and minimize need for future renourishment projects.

Quick Stats:

- Total number of comments on this RMA = 9

Long Responses:

29. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Support	reduce near shore reef loss and reduce turbidity. Support retreat. Do not support shoreline termination (seawalls)	152	Addressed in N-116
Support	I support keeping the beaches clean and for all waste to be removed	170	Already ongoing beach cleanups
Support	should focus on north shore park in miami beach	276	RMAs will focus on entire SEFCRI region
Other	nourishment is killing the reef. Find a better way.	166	agreed

30. "Other comments or input": NONE

Category	Comment	Ref #	CWG response

Not modified

Title:

S-124: Facilitate the creation of regional (inlet-to-inlet) beach management strategies, such as can be achieved through a Beach Management Agreement, which takes an ecosystem approach to projects such as beach nourishment and stormwater pipe removal to maintain beaches and protect resources.

Background:

- This recommended management action relates to nearshore hardbottom and seagrasses in Miami-Dade, Broward, Palm Beach, and Martin counties.
- This recommended management action is being put forth because permits for beach management activities (including erosion control structures and nourishments) are issued on a project-by-project basis, which reduces the efficiency of permitting and regulatory actions. Additionally, Beach Management Agreements (BMAs) have a positive environmental benefit, this regional approach to beach management allows for a more holistic evaluation of environmental resources as opposed to the current project-by-project approach.

Objective:

- The intended outcome of this action is to have a regional, ecosystem-based approach to beach management, as well as improved regulation and streamlined application/ permitting process for beach nourishment. Regionally, ecosystem-based beach management can improve comprehensive coastal management (which includes better management of resources), generate cost efficient and efficient permitting process, which will reduce costs, time delays, and uncertain permitting. Additionally, BMAs are required to provide net ecosystem benefits to the environment.
- By having a BMA there is a required annual (public) review which allows for adaptive management.

Intended Benefits and/or Potential Adverse Effects:

- Benefits of implementation of this recommended management action include a streamlined permitting process resulting from regional, ecosystem-based beach management, increase efficiencies, reduced costs, and net ecosystem benefits. BMAs may result in a more holistic approach to resource management. By statutory requirement the implementation of a BMA-type agreement requires a net positive environmental benefit.
- Some possible issues that may arise with implementation of this recommended management action include: (1) creating a beach management agreement takes a considerable amount of time and some start-up costs should be expected, (2) the use of BMAs is a relatively novel approach to beach management, which will need to be refined and improved-upon over time using an iterative process based on lessons-learned from the current BMA, (3) it is uncertain at this time whether the BMA framework meets the intended results, and (4) upfront costs are higher - especially associated with regional monitoring – which may reduce the number of monitoring sites.
- Additional concerns include ensuring who the responsible party is in the event of impacts. If several municipalities or entities are co-project sponsors then they also need to agree to cost share project mitigation.
- The duration of the benefits of this recommended management action is expected to be long lasting. Nourishment projects are done at regular intervals and are likely to become increasingly necessary as sea levels are projected to rise and storm events are expected to become more severe and frequent. This recommended management action involves recurring

activities. Beach management agreements must be created and management will be on-going. Management should be adaptive and continually improve over time. To date, only one such agreement has been executed and it required a considerable effort by all parties. Maintenance of the current agreement is ongoing and requires a fair amount of effort

- If this recommended management action is not implemented then nourishment projects will continue to be permitted and regulated on a project-by-project basis, which is relatively inefficient for areas where projects often overlap and are handled by multiple permittees. This practice limits resource monitoring to the direct project area. Managing large areas can result in an economy-of-scale, therefore, continuing to manage projects on an individual level may result in additional costs to permittees, but this has yet to be verified.

Agencies/ Organizations:

- The lead agency for implementation of this recommended management action is the Florida Department of Environmental Protection.
- Other potential agencies or organizations who could be involved include local governments (counties, cities, towns), as well as Florida Fish and Wildlife Conservation Commission, and federal agencies (U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, and National Marine Fisheries Service) would also be involved in the creation of regional beach management agreements. The BMA approach to beach management requires a high degree of coordination between multiple entities, including, but not limited to, regulatory agencies, permittees, agents, contractors, and monitoring firms
- The key stakeholders for this recommended management action would be local (city and county) and state governments, as well as others involved with beach nourishment projects such as contractors and environmental consultants. Local sponsors of beach projects may be most affected by the adoption of a BMA-approach to beach management.
- The legislative considerations to take into account include Florida State Statute 403.

Permitting/ Enforcement Requirements of RMA:

- Permitting requirements for this recommended management action include 403.0752 of Florida State Statutes which authorizes BMAs.
- There are no enforcement requirements for this recommended management action.
- A measurable way to show success with this recommended management action includes beach management agreements which would be developed for portions of the southeast Florida region, e.g. from one inlet to another inlet. Development of a region-wide BMA for the entire region is not advised, due to differences in the coastal dynamics and nearshore resources throughout this region. Moreover, BMAs should be developed in only those areas with political and public support. It may not be feasible to get stakeholders and local governments onboard with BMAs in all portions of the region, but this approach should be applied where practicable. The success can be measured in the cost required for projects. The time to process applications for beach projects could also be tracked. Additionally, developing a better understanding of resource management could be measured as a success. This would be measured through development of better resource management tactics and procedures.

Cost:

- The estimated direct cost of implementing this recommended management action is not certain. A summary of costs associated with the existing BMA for Palm Beach has not been conducted (yet). Developing the plan entails mostly staff time and meetings and such, most likely a

relatively low cost.

- Potential funding may be acquired through state and local government agencies that are currently responsible for regulating beach nourishment, as well as the local sponsors like local municipalities and counties. Five additional points would be awarded in the ranking process for the state cost-share funding if a BMA is executed, i.e., if there were two or more projects and two or more eligible governments/sponsors.

Time Frame & Extent:

- The anticipated timeframe for implementation of this recommended management action is 0 - 2 years.

Miscellaneous Info:

- This recommended management action is linked to S-107 and S-120.
- An uncertainty or information gap with this recommended management action is that the current BMA has not been in place long enough to determine if this type of approach or method will produce the intended results.
- It is necessary to determine which portions of the South Florida Coral Reef Initiative (SEFCRI) region have sufficient support from local governments and stakeholders to develop BMAs.
- Supporting and relevant data include the fact that BMAs are allowed under Florida Statute 403.0752. The Town of Palm Beach BMA should be reviewed, as well as similar other projects and processes, in the development of these plans.
- Currently, a BMA has been in place in the Town of Palm Beach since 2013.
    - Some lessons learned have already been identified with the current BMA include:
        - The regional cell monitoring approach is a new concept and is still a year or two away from being fully implemented. After that, it takes a few years to see monitoring data that will allow management to base changes on.
        - Not all projects within the Town of Palm Beach BMA region were included in the BMA. Road/stormwater drainage was not included because it is under a completely different regulatory framework. On a case-by-case basis, FDEP Beaches does regulate structures if they are below mean high water and can include them in regional frameworks.
        - The agreement is limited only to those actions regulated under the Joint Coastal Permit process. Other activities may be relevant (for example upland stormwater) but these cannot be addressed through the BMA process.

Goals/ Objectives to be achieved:

Refer to the SEFCRI Coral Reef Management Goals and Objectives Reference Guide

- FL Priorities Goal A1.
- SEFCRI LAS MICCI Conservation Goal C / SEFCRI LAS MICCI Issue 1 Goal /SEFCRI LAS MICCI Issue 1 Goal Obj. 1 /SEFCRI LAS MICCI Issue 1 Goal Obj. 2 / SEFCRI LAS MICCI Issue 2 Goal / SEFCRI LAS MICC Issue 2 Goal Obj. 1.

S-124 Public Comment Report:

Maritime Industry and Coastal Construction Impacts

Facilitate the creation of regional (inlet-to-inlet) beach management strategies, such as can be achieved through a beach management agreement, which takes an ecosystem approach to projects such as beach nourishment and storm-water pipe removal to maintain beaches and protect resources.

Quick Stats:

- Total number of comments on this RMA = 7

Long Responses:

31. "What do you support, or how could this RMA be changed to an action you could support?":

Category	Comment	Ref #	CWG response
Oppose	this seems like a waste of time money and effort	1264	Ideally not, this is an economy of scale
Other	I support no more nourishment as it burries the reef. Find a better solution	168	RMAs attempt to improve nourishment practices to reduce negative impacts using BMPs.
Other	North Shore Park are in Miami beach should be included	282	All RMAs to address whole SEFCRI region

32. "Other comments or input": NONE

Category	Comment	Ref #	CWG response

Not modified