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VIA ELECTRONIC MAIL

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Re: Port Everglades Expansion Revised Supplemental Draft Environmental Impact Statement

Dear Ms. Angela Dunn,

Thank you for the opportunity to submit comments on the Revised Draft Supplemental Environmental Impact Statement (“RDSEIS”) that the U.S. Army Corps of Engineers (“Corps”) is preparing to evaluate the full impacts of the Port Everglades Navigation Improvements Project (“Port Everglades Project” or “Project”) in Fort Lauderdale, Florida. The Port Everglades Project will dredge and deepen the channels in and around Port Everglades, directly adjacent to or on top of the Florida reef tract and its thriving population of coral colonies. The area’s corals are vital to the well-being of the Florida reef tract and the nation’s marine resources, as well as nearby residential communities, individual divers, recreational diving operations, the commercial and recreational fishing industry, and numerous tourism-related businesses. The Port Everglades Project will take place over a period of five–six years. Due to the risks the project presents to nearby coral and seagrass habitat, the fragile status of Florida’s corals, and recent events that transpired during the Miami Harbor (“PortMiami”) expansion project, we have serious concerns about this project. The expansion of Port Everglades has the potential for widespread and significant impacts on the ecological and economic resources of Fort Lauderdale and nearby coral reef ecosystems.

We recognize and appreciate the Corps for making some improvements to the 2022 RDSEIS over the 2020 SDEIS. These improvements include updated surveys, one year of data collection at fixed monitoring stations prior to construction, and a commitment to increase the numbers of corals relocated from impact sites.

However, many of the issues we raised in our comments on the 2020 SDEIS are left unaddressed. In particular, the Corps has failed to address the following issues:

- The RDSEIS’s climate change analysis remains inadequate;

- The Corps continues to improperly segment the turning notch expansion from the rest of the Project;
- The RDSEIS still lacks a flooding and flushing model;
- The RDSEIS still fails to analyze the Project’s impacts on the spawning snook aggregation;
- Although some new survey data was collected, the RDSEIS still relies on discredited Dial Cordy surveys from 2018;
- The RDSEIS still relies on an inaccurate Sediment Spillage Model to analyze impacts to corals;
- Turbidity controls in the RDSEIS remain inadequate;
- Minimization measures are ambiguous and underestimated; and
- Mitigation measures are ambiguous and underestimated.

Furthermore, it seems that key analyses intended to inform this report are still outstanding, which may render this RDSEIS premature, including:

- The updated Cost Benefit Analyses—anticipated April 2022; and
- The finalized Sediment Morphodynamics Study—anticipated late 2022.¹

We have also identified a number of additional flaws in the RSDEIS. For example:

- The RDSEIS’s sea level rise analysis is inadequate and out of date;
- The RDSEIS includes inaccurate description of PortMiami dredging impacts to reef and corals; and
- The RDSEIS’s Biological Assessment improperly relies on irrelevant or out-of-date biological opinions for conclusions about the Project’s impacts to listed species.

We incorporate by reference our 2021 Comment Letter and the 2021 Comment Letters from the National Marine Fisheries Service (“NMFS”),² the Florida Department of Environmental Protection (“DEP”),³ and the Florida Fish and Wildlife Commission (“FWCC”),⁴ which we have attached to this letter.

I. DREDGING PROJECTS HAVE SEVERE IMPACTS ON CORAL REEFS, HARMING AN ECOSYSTEM ALREADY IN CRISIS AS WELL AS FLORIDA’S ECONOMY

Florida’s reef tract is the only nearshore coral reef in the continental United States, stretching over 330 nautical miles from Martin to Monroe Counties. Coral reefs are some of the most biodiverse habitats on the planet, providing shelter, food, and breeding sites for

¹ USACE, *Revised Draft Supplemental Environmental Impact Statement, Port Everglades Harbor, Broward County, Florida* 116 (Feb. 2022) [*hereinafter* RDSEIS].

² Letter from Andrew Strelcheck, Acting Regional Administrator, NMFS Office of Protected Resources, to Colonel Andrew Kelly, Commander, U.S. Army Corps of Engineers (Feb. 1, 2021).

³ Letter from the Florida Department of Environmental Protection, to Angela Dunn, Chief of Project Planning Branch, U.S. Army Corps of Engineers (April 29, 2021).

⁴ Letter from Rodney Barreto et al., Commissioners, Florida Fish and Wildlife Conservation Commission, to Sean Green, Florida Department of Environmental Protection (April 23, 2021).

commercially- and recreationally-valuable fish as well as coastal barriers from storms. Half of all U.S. federally managed fisheries depend on coral reefs.⁵ Florida's coral reefs can dissipate up to 97 percent of wave energy from storms and hurricanes, providing approximately \$355 billion in flood protection benefits to the state every year.⁶ Based on a 2001 Hazen and Sawyer study, coral reefs generate \$2.1 billion in Broward County alone, and support 36,000 jobs.⁷

Unfortunately, Florida's coral reefs are also in acute crisis. Reefs face natural and manmade threats, including climate change, warming oceans, water pollution, ocean acidification, coastal construction, and disease. Coral reefs in Florida have declined by well over 80 percent since the 1970s, based on 2003 data.⁸ And in the last few years in Florida, this situation has worsened precipitously. We have seen repeated years of coral bleaching between 2014 and 2017, which are now globally recognized as the most prolonged and severe bleaching event ever recorded.⁹ A devastating coral disease outbreak (Stony Coral Tissue Loss Disease ("SCTLD")) has killed hundreds of millions of corals and the PortMiami dredging killed at least 560,000 corals.¹⁰

SCTLD was first observed off Miami-Dade County during the PortMiami Phase III expansion project.¹¹ It was quickly recognized to be extremely lethal to over 20 species of Caribbean coral species, and to have a very high prevalence in the population. No single pathogen has yet been identified, and the disease is widely thought to be a result of combined pressures, including environmental factors.¹² About 60 percent of live coral tissue is estimated to have been lost to SCTLD in just a few years. Recently, NOAA scientists published a study showing that sediment can serve as a vector for SCTLD.¹³

The situation became so dire for Florida's corals that local extirpations occurred, such as pillar coral (*Dendrogyra cylindrus*), which is now thought to be functionally extinct in Florida.¹⁴ Since 2014, 99.9 percent of pillar coral tissue has been lost in southeast Florida.¹⁵ In 2009

⁵ How do coral reefs benefit the economy?, NOAA, https://oceanservice.noaa.gov/facts/coral_economy.html (last visited Mar. 19, 2022).

⁶ USACE, *Draft Supplemental Environmental Impact Statement, Port Everglades Harbor, Broward County, Florida* 124 (Dec. 2020) [hereinafter DSEIS]; *The Value of US Coral Reefs for Risk Reduction—Florida*, USGS (2019), <https://www.usgs.gov/media/images/value-us-coral-reefs-risk-reduction-florida>.

⁷ NOAA, *Summary Report on the Economic Value of U.S. Coral Reefs* 7 (2011), https://www.ncei.noaa.gov/data/oceans/coris/library/NOAA/CRCP/other/other_crcp_publications/Economic_Value_US_Coral_Reefs_Summary_2013.pdf.

⁸ Toby A. Gardner et al., *Long-Term Region-Wide Declines in Caribbean Corals*, 301 SCIENCE 958 (Aug. 15, 2003).

⁹ NOAA Declares Third Ever Global Coral Bleaching Event, NOAA MEDIA RELEASE (Oct. 8, 2015), <https://www.noaa.gov/media-release/noaa-declares-third-ever-global-coral-bleaching-event>.

¹⁰ Ross Cunning et al., *Extensive coral mortality and critical habitat loss following dredging and their association with remotely-sensed sediment plumes*, 145 MARINE POLLUTION BULLETIN 185 (2019).

¹¹ DSEIS at 89.

¹² *Florida's Coral Reef Disease Outbreak: Response*, NOAA, <https://floridakeys.noaa.gov/coral-disease/response.html> (last visited Mar. 19, 2022).

¹³ M.S. Studivan et al., *Reef Sediments Can Act as a Stony Coral Tissue Loss Disease Vector*, FRONT. MAR. SCI. 8:815698 (2022).

¹⁴ Karen Neely, *Pillar coral (Dendrogyra cylindrus) fragment rescue for preservation of genetic diversity*, Florida Fish & Wildlife Research Institute (May 2016) (on file with the Florida Fish and Wildlife Conservation Commission).

¹⁵ DSEIS, App. C at 89.

surveys, however, three colonies were identified near the Port Everglades project site,¹⁶ and Miami Waterkeeper also observed a colony just south of the Port Everglades channel in 2016.¹⁷ The disease outbreak was so severe, and every living coral so precious, that the Association of Zoos and Aquariums began a “coral ark” rescue project in 2019, taking still-healthy corals into land-based aquaria to preserve the genetic diversity of Florida’s corals before it was irreparably lost to SCTLD.¹⁸ Partners on the coral rescue project include Florida Fish and Wildlife Conservation Commission (“FWC”), the Florida Department of Environmental Protection (“DEP”), and NOAA.¹⁹ Most startling, perhaps, is that this disease persists in the environment with active disease lesions still found in areas that began to experience the SCTLD outbreak in 2014 and 2015.²⁰

The PortMiami dredging, spanning from 2013–2015, caused additional stress to the corals of Miami-Dade County. Using a reanalysis of the dredging company’s own environmental contractor’s data, Cuning et al. (2019) reported that over 560,000 corals (likely an underestimate by roughly half) were killed by dredging (not by disease) during the port expansion project.²¹ Cuning et al. also found that the reef habitat, in addition to individual corals, were destroyed by the dredging sediment. Miller et al. (2016) likewise found severe impacts to corals due to dredging at PortMiami.²² Finally, NMFS also documented severe and permanent impacts on coral, stating:

NMFS unequivocally reiterates that the sedimentation actually experienced at the Port of Miami greatly exceeds the amount predicted in our [biological opinion] [T]he sedimentation is clearly detectable and measurable and has clearly adversely affected impacted ESA listed corals such that they had to be relocated under emergency conditions or face imminent mortality (which constitutes a take).²³

The Corps must apply the lessons learned from the PortMiami coral disaster to avoid these unacceptable impacts in the context of the Port Everglades Project.

II. THE CORPS MUST PRODUCE A FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT THAT FULLY COMPLIES WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

Enacted by Congress in 1969, NEPA establishes a national policy to “encourage productive and enjoyable harmony between man and his environment” and “promote efforts

¹⁶ DSEIS, App. C at 89.

¹⁷ *Rare Pillar Coral Found Near Site of Planned Dredging Project*, FACEBOOK, <https://www.facebook.com/MiamiWaterkeeper/videos/rare-pillar-coral-found-near-site-of-planned-dredging-project/1127230157321175/>.

¹⁸ *The Coral Ark That Hopes to Save Florida’s Ailing Reefs*, ATLAS OBSCURA (Feb. 12, 2020), <https://www.atlasobscura.com/articles/florida-coral-rescue-project-ark>.

¹⁹ *Coral Rescue Team*, FLA. DEP’T OF ENV’T PROT., <https://floridadep.gov/rcp/coral/content/coral-rescue-team>.

²⁰ DSEIS at 139.

²¹ Cuning, *supra* note 10.

²² Margaret W. Miller et al., *Detecting sedimentation impacts to coral reefs resulting from dredging the Port of Miami, Florida USA*, PEERJ 4:E2711 (Nov. 17, 2016).

²³ Letter from David Bernhardt, Assistant Regional Administrator, NMFS, to Jason Spinning, USACE, Ongoing Re-initiation of consultation under the ESA between USACE and NMFS for Miami Dredging Project (May 14, 2015).

which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.”²⁴ In order to achieve its broad goals, NEPA mandates that “to the fullest extent possible” the “policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with [NEPA].”²⁵ Central to NEPA is its requirement that, before any federal action that “*may* significantly degrade some human environmental factor” can be undertaken, agencies must prepare an environmental impact statement.²⁶

NEPA and the Council on Environmental Quality (“CEQ”) regulations²⁷ implementing NEPA are meant to ensure that environmental considerations are “infused into the ongoing programs and actions of the Federal Government.”²⁸ In order to achieve this, environmental review must be prepared “at the earliest possible time to insure that planning and decisions reflect environmental values.”²⁹

To comply with NEPA, an EIS must *inter alia* include a “full and fair discussion” of direct and indirect environmental impacts—take a “hard look” at the impacts (40 C.F.R. § 1502.1), consider the cumulative effects of reasonably foreseeable activities in combination with the proposed action (*id.* § 1508.7), analyze all reasonable alternatives that would avoid or minimize the action’s adverse impacts (*id.* § 1502.1), address measures to mitigate those adverse effects (*id.* § 1502.14(f)) and incorporate its environmental analysis into the agency’s decision-making process (*id.* §§ 1500.1, 1502.1). We offer the following comments to ensure the Corps’ compliance with these important mandates.

A. NEPA Requires a Proper Baseline.

In order to properly evaluate environmental impacts, it is imperative that an agency establishes what the baseline conditions are in the vicinity of a project.³⁰ NEPA requires that an EIS “succinctly describe the environment of the area(s) to be affected.”³¹ An assessment of baseline conditions must be “based on accurate information and defensible reasoning.”³²

While new surveys were performed in 2021 by Water & Air Research, the RDSEIS still utilizes data collected by Dial Cordy and Associates in 2018, including turbidity monitoring and

²⁴ 42 U.S.C. § 4321.

²⁵ 42 U.S.C. § 4332.

²⁶ *Steamboaters v. F.E.R.C.*, 759 F.2d 1382, 1392 (9th Cir. 1985).

²⁷ Note that we refer to the 1978/1986 CEQ NEPA regulations rather than the new 2020 CEQ NEPA Regulations throughout this letter. The recent revisions to the NEPA “regulations [] apply to all NEPA processes begun after the effective date.” 85 Fed. Reg 43304, 43339 (July 16, 2020) (to be codified 40 C.F.R. §§ 1500–1508, 1515–1518). The Project’s NEPA process started before the 2020 CEQ NEPA regulations were finalized, and the use of the old regulations is consistent with the Corps’ practice with regards to this Project. *See* DSEIS at 23.

²⁸ *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 371 n.14 (1989) (citation omitted).

²⁹ *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000) (quoting *Andrus v. Sierra Club*, 442 U.S. 347, 351 (1979)).

³⁰ *Great Basin Res. Watch v. Bureau of Land Mgmt.*, 844 F.3d 1095, 1101 (9th Cir. 2016) (“Establishing appropriate baseline conditions is critical to any NEPA analysis.”); *Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988) (“Without establishing the baseline conditions which exist ... before [a project] begins, there is simply no way to determine what effect the [project] will have on the environment and, consequently, no way to comply with NEPA.”).

³¹ *Great Basin Res. Watch*, 844 F.3d at 1101.

³² *Id.*

coral species density and size classes.³³ These surveys are an improvement over the 2010 surveys utilized in the 2015 DEIS, but they still do not extend far enough from the channel to ensure that proper baseline conditions are captured. At PortMiami, impacts were observed beyond 1000m from the channel, but no baseline data was collected beyond that distance.³⁴ This hindered agencies' ability to determine the extent of project-related impacts. This issue should be avoided at Port Everglades by ensuring that surveys extend far beyond any possible areas of impact.

The Corps' responses to our SDEIS 2021 comments note that this is not necessary because of the minimization measures put into place to reduce sedimentation.³⁵ However, the Spillage Model used to estimate impacts is an underestimate. As such, the Corps must complete new baseline surveys before moving forward with dredging at replicable locations extending at least 3,000 m from the existing channel edge. These are necessary to provide critical pre-project baseline information in the event that impacts extend beyond the anticipated area, which is highly likely given past impacts observed at PortMiami and the reliance on an inappropriate spill model for impact estimates (*see* Section II(C)(1)(c) below).

In addition, our prior letter, and several agency letters, recommended that the Corps not rely on Dial Cordy surveys, which were data poor, based on questionable methodology,³⁶ and failed to align with the Interagency Working Group's ("IWG") recommendations.³⁷ The Corps must therefore redo the Dial Cordy surveys, correcting these flaws and abiding by all of the IWG's recommendations.

We also note that Water & Air Research's 2021 Reconnaissance survey recorded the presence of Scleractinia disease and the percent of the colony with visually apparent signs of disease.³⁸ In addition, this survey examined and recorded the disease margin, the white, exposed skeleton at the edge of the disease lesion and discerned whether the disease was progressing fast (greater than one centimeter in width) or slow (one centimeter in width or less). Dial Cordy's surveys did not record this. It is important that survey methodologies be consistent for comparison, as well as to document the Project's impacts on coral disease.

³³ RDSEIS, App. J.

³⁴ Cuning, *supra* note 10; RDSEIS, App. K at 264.

³⁵ RDSEIS, App. K at MW-16, PDF page 899–900.

³⁶ *See* Letter from the Florida Department of Environmental Protection, to Angela Dunn, Chief of Project Planning Branch, U.S. Army Corps of Engineers (April 29, 2021) (stating "Turbidity data collected and analyzed by Dial Cordy and Associates (cited as DCA 2018c) should be checked for quality control / assurance and corrected (e.g., de-spiking). The data analysis methods should be described, including thresholds for retaining or omitting outliers. Even after the data are checked and corrected, these data should be interpreted cautiously given that only two stations were monitored, and no data was collected on the outer reef or south of the channel.")

³⁷ *See* Barreto April 23, 2021 Letter, *supra* note 4 (stating "[t]he functional groups approved by the Interagency Working Group (IWG) for the PEV Reconnaissance Survey were not the same functional groups used by DCA [Dial Cordy and Associates] when conducting the PEV Reconnaissance Survey ... While the original reconnaissance survey protocol was coordinated with and approved by the IWG, the IWG was only informed of subsequent modifications that added in additional functional groups and were not provided the opportunity to review such modifications, resulting in the final protocol used by DCA not having approval of the IWG. FWC staff do not support the conclusions derived from the PEV Reconnaissance Survey as presented in the DSEIS.").

³⁸ RDSEIS, App J at PDF page 274, 280; Water & Air Research, Inc., *Additional Reconnaissance Survey* 1–4 (December 17, 2021).

In sum, it is arbitrary and capricious for the Corps to continue to rely on discredited surveys conducted by Dial Cordy and Associates. Instead, the Corps must provide baseline data far enough to measure any effects from the Project (at least 3,000 m), with surveys that are conducted in line with the IWG's recommendations and that incorporate lessons learned from the PortMiami dredging project.

B. The Corps must ensure that its upcoming cost-benefit analysis is incorporated into the NEPA analysis and made available for public comment.

Section II(C) of our 2021 Comment Letter outlined the flaws in the 2015 cost-benefit analysis that the Corps relied on for previous iterations of this EIS. Those flaws remain in the 2022 RDSEIS as the Corps has not yet prepared a new cost-benefit analysis. However, the RDSEIS does state that the Corps will publish an updated cost-benefit analysis in April 2022,³⁹ although it appears that the Corps is only planning to revise the estimates of Project-related costs, not Project related benefits.⁴⁰ While we are pleased that the Corps is updating the old and inadequate 2015 cost-benefit analysis, we strongly urge the Corps to address the issues we raised in our 2021 Comment Letter, including updating the estimates of the Project's benefits. Specifically, the Corps must recalculate the costs of the Project to include expanded adaptive management, minimization measures, mitigation and monitoring. Also, the Corps should recalculate the benefits of the Project in light of the fact that there is already one deep water port in the region (Port of Miami) and vessels are only likely to increase in size, rendering the current Project obsolete. The economic conditions and needs of the region have changed significantly since 2015 and a revised calculus of the benefits is therefore necessary.

In addition, the Corps must publish the updated cost-benefit analysis and make it available for public comment. The RDSEIS states that the cost-benefit analysis will only be attached to the SEIS or incorporated by reference if it is "relevant to the choice among environmentally different alternatives."⁴¹ There is no question here that the cost-benefit analysis is relevant to the choice between environmentally different alternatives. The RDSEIS makes this clear: costs were a primary factor in choosing to eliminate multiple alternatives from consideration, including some of the alternatives most protective of the environment such as longer dredging windows to protect spawning corals.⁴² Costs were considered in rejecting other alternatives as well, including various alternative methods to dispose of the dredged material.⁴³ Because the RDSEIS uses costs to weigh alternatives, the cost-benefit analysis should be appended to the Final SEIS or incorporated by reference.

Moreover, the cost benefit analysis must be made available for public comment. First, NEPA regulations require that any material incorporated by reference must be made "reasonably available for inspection by potentially interested persons within the time allowed for

³⁹ RDSEIS at 20.

⁴⁰ RDSEIS, App. K at MW-17, PDF pages 264–65.

⁴¹ RDSEIS at 20

⁴² See e.g. RDSEIS at 76–77 (stating "[a]lthough Avoidance and Minimization Measure 5A would take into account the spawning period of all 17 of the coral species ... it has been eliminated from further consideration as a design refinement due to biddability, logistics, and costs." Same for Avoidance and Minimization Measures 5B and 5C).

⁴³ RDSEIS at 71–75.

comment.”⁴⁴ As stated above, because the cost-benefit analysis is relevant to environmental decision-making, it must be appended or incorporated by reference, so public inspection is also required. Likewise, NEPA requires that “environmental information is available to public officials and citizens before decisions are made and before actions are taken.”⁴⁵ Again, as established above, the cost-benefit analysis contains environmental information—information about how much environmentally sound alternatives cost. It therefore must be made available to the public.

Finally, as detailed below, the Corps needs to update its sea-level rise analysis and incorporate this update into the cost-benefit analysis.

C. The Corps must take a “hard look” at environmental impacts including the vast impact dredging has on corals.

The fundamental purpose of NEPA analysis is to force the decision-maker to take a “hard look” at a particular action before deciding whether to proceed. The agency must consider its need for that action, the associated environmental consequences, and the availability of environmentally benign alternatives that may substitute for the action.⁴⁶ This “hard look” requires agencies to utilize all high-quality information and accurate scientific analysis, including accurate scientific interpretations of data and studies.⁴⁷ If there are not sufficient data available, the agency must follow the requisite procedure for addressing or evaluating the impacts in view of incomplete or unavailable information.⁴⁸ “General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided.”⁴⁹ The law is clear that the environmental analysis must be a pre-decisional, objective, rigorous, and neutral document, not a work of advocacy to justify an outcome that has been foreordained.

Agencies are further required to identify their methodologies, to indicate when necessary information is incomplete or unavailable, to acknowledge scientific disagreement and data gaps, and evaluate indeterminate adverse impacts based upon approaches or methods “generally accepted in the scientific community.”⁵⁰ Finally, NEPA does not “permit agencies to falsify data or to ignore available information that undermines their environmental impact conclusions.”⁵¹ Thus, the Corps’ review must be thorough and the agency may not “sweep[] negative evidence under the rug.”⁵²

The RDSEIS for the Port Everglades Project does not include a complete analysis of impacts. Instead, the RDSEIS underestimates total impact by refusing to acknowledge the true

⁴⁴ 40 CFR §1502.21

⁴⁵ 40 CFR §1500.1(b).

⁴⁶ See 40 C.F.R. §§ 1500.1(b), 1502.1.

⁴⁷ See *id.* at 1500.1(b).

⁴⁸ *Id.* § 1502.22.

⁴⁹ *Klamath-Siskiyou Wilderness Center v. Bureau of Land Mgmt.*, 387 F.3d 989, 993 (9th Cir. 2004) (quoting *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998)).

⁵⁰ 40 C.F.R. §§ 1502.22(b)(2), (4), 1502.24.

⁵¹ *Hoosier Env’t Council v. U.S. Dep’t of Transp.*, No. 1:06-cv-1442-DFH-TAB, 2007 WL 4302642, at *13 (S.D. Ind. Dec. 10, 2007).

⁵² *Nat’l Audubon Soc’y v. Dep’t of the Navy*, 422 F.3d 174, 194 (4th Cir. 2005).

mortality of corals during PortMiami dredging and by relying on an inadequate spillage model. The PortMiami dredging destroyed over 560,000 corals, far beyond what the Corps or NMFS predicted. Despite numerous studies demonstrating these outcomes, the Corps has failed to acknowledge the true scope of the impact at PortMiami or apply that scope of impact to the Port Everglades Project. In order to take the “hard look” that NEPA requires, the Corps must acknowledge the true scope of coral mortality at PortMiami, conduct modeling adequate to measure impact, more fully assess the connections between dredging activities and coral disease, and examine impacts from climate change induced- sea level rise.

1. The RDSEIS fails to fully and accurately analyze the Project’s impacts to corals.

As stated above, the impact on corals from dredging is extreme. The PortMiami dredging project killed at least 560,000 corals and possibly twice that many.⁵³ The PortMiami dredging also coincided with a devastating disease outbreak, and could have even contributed to it, either sparking or accelerating the outbreak. Studivan et al. (2022), a recent NOAA publication, shows that sediment is a vector for SCTLD.⁵⁴ The link between sedimentation and disease is well-established.⁵⁵ At least one species of coral, pillar coral, became locally extinct in Miami-Dade County as a result of SCTLD,⁵⁶ and possibly more species in more areas too.

a. *The Final SEIS must include an estimate of the total mortality of coral.*

While the RDSEIS contains an estimate of the area affected by sediment, the RDSEIS does not contain any estimate of the total number of corals the Project will destroy. The Final SEIS must include such an estimate to ensure that mitigation and minimization measures are commensurate with the scope of the Project’s impacts.

b. *The RDSEIS mischaracterizes the scope of impact to corals from the PortMiami dredging project, thereby minimizing the Project’s impacts to corals.*

The RDSEIS provides contradictory and inaccurate statements about the impact of the PortMiami project on corals. The following sentences were added in the RSDEIS:

The Corps completed one-year post construction monitoring pursuant to the terms of the DEP permit for the Port Miami Project. Monitoring data indicate that Project-related sediment observations greatly varied in time and space, as did resource response to sediment levels. Although some Project-related mortality of corals and other benthic organisms occurred as a result of Project construction, ***available monitoring data indicate that the habitat effects of Project-related sediment were temporary, as anticipated.*** As explained in the Miami Harbor Phase III deepening project one-year post-construction impact assessment (DCA 2017b), post construction data concluded that sediment depths in the Project area declined since project completion and were trending toward baseline levels. It is

⁵³ Cuning, *supra* note 10.

⁵⁴ Studivan, *supra* note 13.

⁵⁵ DSEIS at 139.

⁵⁶ Neely, *supra* note 14.

our understanding that both NMFS and Florida DEP are still reviewing the pre- and post-construction monitoring data from the Miami Harbor Phase III deepening project, and we have not yet received their conclusions.⁵⁷

This statement is troubling for two reasons. First, it relies on a discredited report by Dial Cordy to unjustifiably and erroneously conclude that impacts at PortMiami were temporary and inconclusive. Second, it directly contradicts other accurate statements in the RDSEIS as well as credible scientific studies⁵⁸ that examine the severe impacts of dredging at PortMiami.

The RDSEIS's statement concluding that impacts from dredging at PortMiami were temporary and inconclusive relies on a discredited study conducted by the contractor of the PortMiami project. The "baseline data" referenced in the statement cannot be relied upon because dredging had already begun when these data were collected. Therefore, these data do not represent a "return to normal." Even with this elevated baseline data (which had been exposed to dredging sediment already for weeks in some cases), sediment levels were still not near "baseline" conditions at the one-year post-construction survey. Only two near-channel sites in Dial Cordy's report had true baseline data (i.e. collected before dredging began).⁵⁹ These sites indicated an increase from 0.2% to 34% sediment cover from 2013 to 2016 at the southern middle reef, and from 1.2% to 19% sediment cover over the same period at the northern middle reef.⁶⁰ A year after dredging had ended, therefore, these sites had not returned to pre-dredging sediment level conditions, but remained affected by elevated sedimentation.

Moreover, subsequent studies have discredited the Dial Cordy Report. For example, Cuning et al. found that PortMiami's dredging sediment destroyed reef habitat, in addition to individual corals. Using a combined approach of satellite imagery and the dredging company's environmental monitoring contractor's own in situ data, Cuning et al. estimates that dredging affected 5–10 km of the reef to varying degrees. In some areas near the channel, sediment buried 50–90% of the reef.⁶¹

Miller et al. (2016) found similar impacts, reporting that sediment percent cover on hardbottom was 36x higher near the dredging than at northern reference sites.⁶² The study also reported up to 10x higher sediment depth near the dredging as compared to reference sites.⁶³ Corals near the construction had up to a 5.1x increase in partial coral mortality, and up to 21.3x more sediment accumulation on live coral tissue. Miller et al. also reported that 48% of corals at the reference site displayed positive growth during the period of the project, but only 18% of surviving corals near the channel had positive growth, showing that sublethal stress on colonies near the construction was significant as well.⁶⁴

⁵⁷ RDSEIS at 115.

⁵⁸ *Id.*; see also Miller, *supra* note 22; Cuning, *supra* note 10.

⁵⁹ NMFS, *Examination of Sedimentation Impacts to Coral Reef along the Port of Miami Entrance Channel*, December 2015, Final Report 43 (April 2016).

⁶⁰ Cuning, *supra* note 10.

⁶¹ Cuning, *supra* note 10.

⁶² Miller, *supra* note 22.

⁶³ *Id.*

⁶⁴ *Id.*

The erroneous statement in the RDSEIS also contradicts NOAA's April 2016 sediment impact report, which found that sedimentation on the middle reef was so severe that some areas would never recover—that at least 6.6 *acres* of reef were permanently transitioned to sand.⁶⁵

The combined results of these studies are conclusive: the PortMiami dredging project caused up to a full one-third loss of coral habitat to sedimentation even one year post-construction. This loss of habitat due to sedimentation—remaining a year post-construction—is the very definition of a permanent impact, per DEP's permit.⁶⁶ Contrary to the RDSEIS's claims, the PortMiami project's impacts to corals were severe and permanent.

The addition of this statement in the RSDEIS is telling. It demonstrates that the Corps is not committed to learning from past mistakes or implementing lessons learned. It reverses years of work made by the IWG and years of research and collaboration to improve dredging outcomes. Moreover, the Corps' refusal to acknowledge the true scope of impact demonstrates that the Corps is not taking the hard look that NEPA requires. The permanent loss of coral habitat, including Acropora habitat, is a plausible outcome of this Project. It is imperative that the Final SEIS take a hard look at the permanent loss of coral and coral habitat that will result from the Project and include a realistic estimate of this permanent loss in the Final SEIS.

c. The RDSEIS underestimates coral mortality because the spillage model fails to adequately demonstrate sedimentation impacts from the Project.

As noted in our 2021 Comment Letter, the monitoring, mitigation, minimization, and adaptive management plan are all designed based upon impact estimates resulting from an inappropriate spillage model. The RSDEIS itself explains how the model is not appropriate for this project and will underestimate sedimentation, stating:

The Spillage Analysis is considered a conservative estimate since it is an estimate of expected total sediment exposure from a one-time spill event with material distributed across the different segments of the dredging project. In reality this is a multiple year dredging project and there will be currents running south to north which is expected to dissipate sediment as it is being dredged. This analysis was reviewed and validated by USACE Engineer Research and Development Center (ERDC) dredging experts and was subjected to Agency Technical Review.⁶⁷

A one-time spill event cannot capture the continuous and ongoing sedimentation that coral and coral habitat will experience over the five- or six-year duration of the Project.

The undersigned organizations are not the only entities to raise concerns over the Corps' reliance on this spillage model in the SEIS. The Florida Fish and Wildlife Commission's Request for Additional Information likewise states:

⁶⁵ NMFS Final Report, *supra* note 59 at 1, 47, 51.

⁶⁶ FDEP Draft Environmental Resources Permit # 0305721-001-BI for the Miami Harbor Phase III Federal Channel Expansion at 32.

⁶⁷ RDSEIS at 160.

As seen during Miami Harbor Phase III, using conservative methods can drastically underestimate the potential effects and thus underprepare mitigation and triage resources. We recommend using a model that better represents resuspension, time scales (project length), and energetic events to better prepare the USACE to identify potential dredging impacts to surrounding coastal habitats.⁶⁸

The Final SEIS should use a different model that can capture the realities of a five- to six-year dredging Project. At the very least, the Final SEIS must acknowledge that the model underestimates impact and must mitigate and monitor for *all* the impacts the model shows will occur.

- d. The RDSEIS minimizes the Project's role in spreading or worsening coral disease and fails to analyze the Project as a potential vector for Stony Coral Tissue Loss Disease (SCTLD) and the additional coral mortality this may cause.*

In our 2021 Comment Letter, we stated that the SEIS should include a more robust discussion of the impacts of dredging-exacerbated disease on coral and the Florida Reef Tract. In the RDSEIS, the Corps dismisses this concern, stating “A SCTLD outbreak can happen anywhere at any time.”⁶⁹ This statement fails to acknowledge that while disease may occur at any time or in any place, the science indicates dredging makes coral disease *more* likely to occur, spread, and worsen, as the RDSEIS acknowledges elsewhere.⁷⁰ The Project will likely exacerbate disease at the Project site. The Final SEIS must consistently acknowledge this fact and account for it in coral mortality estimates.

In addition, The RSDEIS does not include Studivan et al. (2022), a recent NOAA publication which shows that sediment is a vector for SCTLD. In the Studivan et al. study, corals in a tank with sediment became infected within 24 hours of exposure, as opposed to corals without sediment, which took one to two weeks.⁷¹ This study highlights the clear additional risk factors of dredging near corals. Studivan et al.'s abstract states, “reef sediments can indeed transmit SCTLD through indirect exposure between diseased and healthy corals,” and “[t]his study emphasizes the critical need to understand the roles that sediment microbial communities and coastal development activities may have on the persistence of SCTLD throughout the endemic zone, especially in the context of management and conservation strategies in Florida and the wider Caribbean.”⁷² The NOAA press release quoted author Ian Enochs, who also heads the Atlantic Oceanographic and Meteorological Laboratory's Coral Program, as stating, “[w]e hope this new information will provide managers with critical information needed to respond to

⁶⁸ Barreto April 23, 2021 Letter, *supra* note 4.

⁶⁹ RDSEIS, App. K, Corps responses to NMFS-1, NMFS-21, MM-2, MW-25, MW-26, MW-29, MW-63.

⁷⁰ RDSEIS at 159–60.

⁷¹ Studivan, *supra* note 13.

⁷² *Id.*

the SCTLD outbreak, especially in the context of mitigating further disease spread with coastal construction activities like dredging and beach renourishment.”⁷³

A clear discussion of the SCTLD risk from dredging and how adaptive management will address any outbreaks must be included in the Final SEIS. This potential must also be factored into the monitoring and mitigation plans. Disease-exacerbated coral mortality must be monitored for and included in the total coral mortality estimate for the Project as well.

2. The Corps needs to include a more robust analysis of “decanting” and/or “dewatering” in the Final SEIS.

Decanting and dewatering caused sedimentation of hardbottom habitat and coral reefs during the PortMiami project. Since these practices will also be used at the Project, the Final SEIS must explain what these terms mean and must discuss their potential impact on coral and seagrass habitats at the Project site. Settling times and discharge depths need to be acknowledged and the Final SEIS must discuss how impacts related to these activities could harm reefs. Similarly, dewatering has the potential to release sedimentation into the aquatic environment. Therefore, the Final SEIS should discuss how any dewatering could impact adjacent habitats and what minimization measures are in place to control sediment-laden water from entering adjacent waters.

3. The Corps must analyze the sedimentation impacts from blasting, including whether blasting negates the benefits from the prohibition on rock-chopping.

The Project allows blasting, which could result in the same kinds of sedimentation harms as rock-chopping, which the RDSEIS prohibits. The Final SEIS must include an analysis on the sedimentation impacts of blasting, to determine whether the current minimization measures are adequate. For more details on this issue, please see our 2021 Comment Letter at Section II(D)(3).

4. The RDSEIS fails to analyze additional environmental impact from leaking scows.

At PortMiami, transport scows were continually leaking, despite requirements to change leaking scows and ullage-change restrictions for transit.⁷⁴ The RSDEIS does not explain how this issue will be fixed at Port Everglades, other than to state that leaking scows are not allowed. This was also the case at PortMiami, and sensors were installed on the scows, yet the scows continued to leak sediment. The RDSEIS fails to consider the impact of leaking scows on area resources or to propose a plan to fix leaking scows. The Final SEIS should be updated to correct this flaw. For more details on this issue, please see our 2021 Comment Letter at Section II(D)(4).

5. The Final SEIS must analyze blasting impacts to snook spawning.

⁷³ NOAA, Atlantic Oceanographic & Meteorological Laboratory, *Sediments a Likely Culprit in Spread of Deadly Disease on Florida Coral Reefs, Study Finds* (Jan. 24, 2022), <https://www.aoml.noaa.gov/news/sediments-a-likely-culprit-in-spread-of-disease-on-florida-coral-reefs/>.

⁷⁴ Letter from James Giattina, Director, U.S. Environmental Protection Agency Water Management Division, to Eric Summa, Chief, U.S. Army Corps of Engineers Environmental Branch Planning Division (June 5, 2015).

There is a documented snook aggregation site alongside the Port Everglades shipping channel. However, the RDSEIS does not analyze the Project's impacts to this snook aggregation. The Final SEIS should be updated to correct this flaw. For more details on this issue, please see our 2021 Comment Letter at Section II(D)(6).

6. The Corps must analyze the effects of climate change in conjunction with the Project, including the effects of climate change-induced sea-level rise.

As we stated in our 2021 Comment Letter, the SEIS must fully analyze the effects of climate change in conjunction with the Project. This includes accounting for the greenhouse gas emissions associated with destroying carbon-sequestering ecosystems like mangroves and seagrasses, as well as analyzing how the Project's environmental impacts will be exacerbated by climate change. For more details on the flaws in the RDSEIS's climate change analysis see our 2021 Comment Letter at Section II(C)(7).

In addition, the RDSEIS's sea level rise analysis is woefully out of date and inadequate. The Corps should re-analyze the effects of sea-level rise on the Project, both in terms of economic costs and environmental impacts.

The Corps relies on out-of-date studies to analyze the effects of sea level rise on the Project. For example, the Corps relies on three studies, one from 1987 (a report on sea-level rise from the National Research Council), one from 2007 (the 2007 IPCC report), and one from 2009 (Coastal Sensitivity to Sea-Level Rise from the U.S. Climate Change Science Program) to state that the extent of sea level rise in the future is uncertain and therefore is difficult to analyze for local projects.⁷⁵ These studies do not represent the best current understanding of sea-level rise. NOAA recently released the 2022 Sea Level Rise Technical Report, which "provides greater confidence in estimates of sea level rise" than previous reports "because of advances in sea level science, as captured in the Intergovernmental Panel on Climate Change's Sixth Assessment Report [from 2021], and the use of multiple lines of evidence: both the trends in the amount of relative sea level rise already observed and the models of future sea level rise closely match one another in the next 30 years."⁷⁶ The 2016 DEIS relied on reports that were already outdated in 2016. It is arbitrary and capricious for the Corps to continue relying on these outdated reports six years later, particularly when better and more recent studies exist. As stated above, the level of uncertainty in sea level rise projections has decreased significantly in recent years and thus a more precise and accurate analysis is possible.

An updated sea-level rise analysis is especially crucial because the 2022 Sea Level Rise Report shows significantly greater sea level rise than the Corps estimated in the 2016 DEIS. The 2016 DEIS estimated three different sea level rise scenarios over the 50-year timeframe of the Project: a low scenario of 0.39 feet rise, an intermediate scenario of 0.84 feet rise, and a high scenario of 2.25 feet rise.⁷⁷ But the 2022 Sea Level Report shows that the latest projections for the southeastern U.S. coast over the next 50 years are a low scenario of 0.37 meters (1.2 ft), an

⁷⁵ 2016 DEIS at 260.

⁷⁶ NOAA, *2022 Sea Level Rise Technical Report: Updated Projections Available Through 2150 for U.S. Coastal Waters*, <https://oceanservice.noaa.gov/hazards/sealevelrise/sealevelrise-tech-report.html#step1> (last visited Mar. 19, 2022).

⁷⁷ 2016 DEIS at 261

intermediate scenario of 0.59 meters (1.9 ft), and a high scenario of 1 meter (3.3 ft).⁷⁸ While the Corps concluded that “total regional sea level rise predicted by the three scenarios (baseline, intermediate, and high) will not have a significant impact to the performance of the Port Everglades project,”⁷⁹ this conclusion is no longer valid for the high scenario, which is a foot higher than the Corps analyzed.

The Corps also concluded that sea level rise would not affect the Project’s structures, with the caveat that “[t]he highest level of sea level rise could potentially result in nearly constant overtopping of the structure as it is presently designed. However, such sea level rise is expected to occur at a given rate over a period of years, allowing for the application of adaptive management measures.”⁸⁰ It is unclear exactly how much sea level rise would cause this, or whether this could now occur at the intermediate scenario—a question that should be answered in the updated sea level rise analysis. It is also entirely unclear from the Corps’ analysis what would occur at 3.3 feet of sea level rise (the current high scenario). The Corps should analyze what this adaptive management might look like in the context of the Project and include any additional costs associated with this adaptive management in the updated cost-benefit analysis, as well as any benefits that would accrue due to rising sea levels, in the scenario that rising seas obviate the need for some or all of the Project.

Finally, the Corps’ analysis of how sea level rise will increase shoreline erosion and flooding is entirely inadequate. The Corps merely states that “[w]hile there are regions of Port Everglades that may be susceptible to increased erosion and flooding, these regions are not within the scope of the present study.”⁸¹ The Corps fails to explain why this critical issue was not within the scope of the analysis. This oversight is especially egregious because the Project will directly affect the coastline’s ability to protect against shoreline erosion and flooding. Coral, seagrasses, and mangroves—all of which will be destroyed by the Project—protect coastal communities and infrastructure from both erosion and flooding,⁸² the very environmental impacts that climate change will worsen. Flooding may also increase in the area due to dredging. The Corps must analyze how the Project’s destruction of these coastal resources will interact with climate change induced sea level rise to worsen erosion and flooding at the Project site. Indeed, the CEQ’s 2016 climate change guidance explicitly directs agencies to analyze these kinds of climate change-exacerbated effects, stating:

The analysis of climate change impacts should focus on those aspects of the human environment that are impacted by both the proposed action and climate change. Climate change can make a resource, ecosystem, human community, or structure more susceptible to many types of impacts and lessen its resilience to other environmental impacts apart from climate change. This increase in vulnerability can exacerbate the effects of the proposed action. ... Such considerations are squarely within the scope of NEPA and can inform decisions

⁷⁸ NOAA, *Regional Projections: Southeast Coast*, <https://sealevel.nasa.gov/task-force-scenario-tool/?type=regional®ion=SE> (last visited Mar. 19, 2022).

⁷⁹ 2015 Feasibility Study, App. A at A-16.

⁸⁰ *Id.* at A-16 to A-17.

⁸¹ *Id.* at A-17.

⁸² Greg Guannel et al., *The Power of Three: Coral Reefs, Seagrasses and Mangroves Protect Coastal Regions and Increase Their Resilience*, 11(7) PLOS ONE (2016).

on whether to proceed with, and how to design, the proposed action to eliminate or mitigate impacts exacerbated by climate change.⁸³

The Corps must therefore update the RDSEIS's sea level rise analysis, using recent science and aligning the analysis with CEQ guidance. Moreover, the Corps should include a flushing and flooding model as discussed in our 2021 Comment Letter at Section II(D)(8).

D. The Biological Assessment is insufficient because it relies on an unrelated biological opinion, SARBO, and NMFS's out of date 2014 biological opinion for determinations about impacts to listed species.

The Biological Assessment ("BA") (attached as Appendix C of the RDSEIS) relies heavily on NMFS's 2014 Biological Opinion to conclude that the Project's impacts will not appreciably reduce the likelihood of survival of ESA-listed coral species.⁸⁴ Many aspects of the Project have changed since 2014, and so has the science on the ways in which sedimentation can affect coral health. In particular, as stated above, recent science indicates that sediment can not only make coral more susceptible to disease as discussed in the BA but can also be a *vector* of disease.⁸⁵ This means that the impact area for the Project and the number of corals affected may be greater than currently anticipated. Studies such as Cuning et al. 2019 and Miller et al. 2016 and the 2016 NOAA Sedimentation report likewise give insight into the specific ways dredging can severely and permanently alter the Florida Reef Tract, none of which were available in 2014. In addition, threats to coral species survival have increased over the last eight years as well (e.g. warming and acidifying oceans and local extinctions), rendering NMFS's conclusions in the 2014 biological opinion out of date on this issue. NMFS must rely on recent science and current threats to determine whether the Project will appreciably reduce the survival of any listed coral species.

The BA also improperly relies on SARBO to conclude that sediment and turbidity will not affect various mobile listed species.⁸⁶ SARBO only covers maintenance dredging, dredging operations that produce far less sediment and turbidity over a much shorter timeframe than the Project.⁸⁷ SARBO's conclusions on effects to various species are therefore not valid for the Project.

E. The RDSEIS's cumulative impacts analysis remains inadequate.

As we stated in our 2021 Comment Letter, the DSEIS failed to meaningfully update its cumulative impacts analysis. The RDSEIS suffers from the same flaw. While the cumulative impacts section now includes some projects not supervised by the Corps, it still fails to account for numerous cumulative impacts, including sewage discharge near and at the Project site,

⁸³ Memorandum from Christina Goldfuss, CEQ, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* 21 (Aug. 1, 2016), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf.

⁸⁴ RDSEIS, App. C at 165.

⁸⁵ Studivan, *supra* note 13.

⁸⁶ RDSEIS, App. C at 106, 110, 114, 121, 124, 125, 128.

⁸⁷ NMFS, *South Atlantic Regional Biological Opinion for Dredging and Material Placement Activities in the Southeast United States* 159 (2020).

commercial and recreational fishing, boat anchorings affecting hardbottom, foreseeable future dredging projects at the port, cumulative impacts from increased algal growth and turbidity, and cumulative impacts from climate change. In addition, the original cumulative impacts from the 2015 EIS, which the Corps incorporates by reference, still relies on the mistaken assumption that the Project's impact zone only extends 150 meters. This is no longer the case. Finally, as explained in Section III(E)(2) of our 2021 Comment Letter, the Corps should expand the geographic scope of the cumulative impacts analysis, particularly now that sediment is a proven vector of coral disease. For more detail on these issues, please see our attached 2021 Comment Letter at Section II(E).

F. The Corps improperly segmented the Turning Notch Expansion from the Project.

The Corps improperly segmented the Turning Notch Expansion from the rest of the Project, which NEPA prohibits.⁸⁸ The Corps responded in Appendix K, Part I (MW-12) to our previous comment letter regarding the Turning Notch, stating that this portion of the project was initially part of the deepening project. We understand from the Corps' response that the Turning Notch was truncated from the federal project and farmed out to Broward County. The Turning Notch Expansion Project is clearly an interdependent part of the Project, serving the same goal (accommodating post-Panamax vessels) as the Project.⁸⁹ The Final SEIS must therefore analyze the impacts from the Turning Notch Expansion Project and include mitigation as appropriate. For more details on how the segmentation of the turning notch expansion violates NEPA, please see our 2021 Comment Letter at Section II(F). This issue was also raised in 2021 by the Corps' sister agency, the National Marine Fisheries Service.⁹⁰

G. The Final SEIS must evaluate a range of reasonable alternatives and fully evaluate monitoring and mitigation measures.

The analysis of alternatives "is characterized as 'the heart' of the environmental impact statement."⁹¹ In the environmental analysis, the agency must "[r]igorously explore and objectively evaluate *all* reasonable alternatives"⁹² in response to a "specif[ie]d ... purpose and need."⁹³ Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of the supplement to inform agency deliberation and facilitate public involvement would be greatly degraded.⁹⁴ NEPA requires the development of

⁸⁸ 40 C.F.R. § 1508.27(b)(7).

⁸⁹ 2015 Final Feasibility Report at 93.

⁹⁰ NMFS, Comment Letter on the *Draft Supplemental Environmental Impact Statement for Port Everglades Harbor, Florida* (February 1, 2021).

⁹¹ *Colo. Env't Coal. v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999) (quoting 40 C.F.R. § 1502.14).

⁹² 40 C.F.R. § 1502.14(a) (emphasis added).

⁹³ 40 C.F.R. § 1502.13; *see also New Mexico ex rel. Richardson*, 565 F.3d 683, 703 (10th Cir. 2009) ("[A]n EIS must 'rigorously explore and objectively evaluate' all reasonable alternatives to a proposed action, in order to compare the environmental impacts of all available courses of action." (quoting 40 C.F.R. § 1502.14)).

⁹⁴ *See Baltimore Gas & Elec. Co. v. Nat'l Res. Defense Council*, 462 U.S. 87, 97 (1983).

“information sufficient to permit a reasoned choice of alternatives as far as environmental aspects are concerned.”⁹⁵

NEPA’s statutory language implicitly charges agencies with mitigating the adverse environmental impacts of their actions.⁹⁶ NEPA’s implementing regulations also require mitigation measures.⁹⁷ The CEQ has stated: “All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or the cooperation agencies.”⁹⁸ According to the CEQ, “[a]ny such measures that are adopted must be explained and committed in the [record of decision].”⁹⁹

“[O]mission of a reasonably complete discussion of possible mitigation measures would undermine the ‘action-forcing’ function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects.”¹⁰⁰ A “perfunctory description,” of mitigation, without “supporting analytical data” analyzing their efficacy, is inadequate to satisfy NEPA’s requirements that an agency take a “hard look” at possible mitigating measures.¹⁰¹ Moreover, in its final decision documents, an agency must “[s]tate whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not.”¹⁰²

The CEQ also recognizes that the consideration of mitigation measures and reasonable alternatives is closely related. For example, CEQ’s guidance on mitigation and monitoring states that “agencies may commit to mitigation measures considered as alternatives in an EA or EIS so as to achieve an environmentally preferable outcome.”¹⁰³

1. The Final SEIS must clarify coral relocation commitments and ensure that relocation efforts match the scope of the Project’s impacts on corals.

Currently, the coral relocation measures in the RDSEIS are insufficient, underestimated, and ambiguous. The Corps must correct and clarify these underestimations and ambiguities in the Final SEIS.

- a. *The RDSEIS’s coral relocation measures are underestimated and insufficient.*

⁹⁵ *Colo. Env’t Coal.*, 185 F.3d at 1174 (quotations and alteration omitted); see also *New Mexico ex rel. Richardson*, 565 F.3d at 708.

⁹⁶ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 351–52 (1989); *Holy Cross Wilderness Fund v. Madigan*, 960 F.2d 1515, 1522 (10th Cir. 1992).

⁹⁷ 40 C.F.R. §§ 1502.14(f), 1502.16(h).

⁹⁸ Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18026, 18031 (March 23, 1981).

⁹⁹ *Id.* at 18036.

¹⁰⁰ *Robertson*, 490 U.S. at 352.

¹⁰¹ *Neighbors of Cuddy Mountain*, 137 F.3d at 1380–81.

¹⁰² 40 C.F.R. § 1505.2(c).

¹⁰³ Memorandum from Nancy Sutley, CEQ, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact 2* (Jan. 14, 2011); see also *id.* at 6 (“When a Federal agency identifies a mitigation alternative in an EA or an EIS, it may commit to implement that mitigation to achieve an environmentally-preferable outcome.”).

The RDSEIS's coral relocation commitments are confused and underestimated. The RDSEIS proposes to relocate 56,010 corals,¹⁰⁴ a small fraction of the total number of corals the Project is expected to destroy.

As an initial matter, the RDSEIS does not contain an estimate of the total number of coral colonies that the Project will kill. This is a huge flaw in the RDSEIS because it is impossible to determine if the RDSEIS's relocation effort is at all commensurate with the scope of the Project's impacts.

However, NMFS estimates that the Project will kill 343,071 based on the area of direct impact and "areas outside the dredging footprint expected to experience 15 to 20 centimeters of sediment deposition"¹⁰⁵ based on the Corps' spillage model. If this estimate is correct, then 56,010 corals is only 16% of the total corals the Project will destroy, an unacceptably low number given the dire state of the Florida Reef Tract. Moreover, the 343,071 figure is itself an underestimate, making the RDSEIS's relocation effort even more inadequate, as described below.

First, the 343,071 figure is likely an underestimate because it is based on the Corps' Spillage Model. As stated above, the Spillage Model likely underestimates the amount of sedimentation resulting from the Project and the areas in which it will occur. Therefore, more reef areas will likely experience excessive sedimentation than currently predicted in the RSDEIS, and the Project will therefore likely kill more than 343,071 corals.

Second, the 343,017 figure is an underestimate of corals that will be killed because it assumes reef will only be permanently destroyed and/or corals killed in areas predicted to receive 15–20 cm of sediment.¹⁰⁶ This is not the case. According to NMFS, areas with greater than 4 cm will experience severe impacts, and coral habitat exposed to 4 or more cm of sediment will *never* naturally recover from sedimentation.¹⁰⁷ Therefore, any reef receiving 4 or more centimeters of sediment is likely to be permanently destroyed, and any corals in those areas will be killed—in *addition* to areas predicted to receive 15–20 cm of sediment. Only the very largest corals can survive exposure to 15 cm or more of sediment. According to the size class distributions provided by Dial Cordy in 2018, most corals will be buried even by 4 cm of sediment.¹⁰⁸

In this context, the Corps' commitment to relocate only 56,010 corals is wholly inadequate. Relocating only 56,010 corals is simply not commensurate with the scope of the Project's impacts on corals, representing only a small fraction of the total corals the Project will destroy.

In addition, the commitment of relocating 56,010 corals conflicts with other commitments in the RDSEIS. Specifically, the Corps appears to commit to relocating all corals

¹⁰⁴ RDSEIS, App. F at F-41, fn. 1 (stating that 43,054 stony corals will be relocated for compensatory mitigation in addition to approximately 12,956 stony corals proposed to be relocated under the auspices of "minimization.").

¹⁰⁵ Strelcheck Letter, *supra* note 2.

¹⁰⁶ *Id.*

¹⁰⁷ NMFS Final Report, *supra* note 59 at 1, 47–48.

¹⁰⁸ RDSEIS, App. J at 50.

that are over 5 cm and any size class of ESA-listed species for mitigation.¹⁰⁹ If this is the Corps' commitment, then the Corps is committing to relocate far more corals than the 56,010 identified for the following reason: the Dial Cordy 2018 report visually depicts size class distribution of the surveys, indicating that at least 30–40% of the corals in the survey area have a diameter of 5 cm or more.¹¹⁰ Therefore, based on baseline data, the Corps' commitment to relocate all corals over 5 cm is a commitment to relocate at least an estimated 102,000 corals.¹¹¹ Indeed, the RDSEIS never explains how the Corps arrived at the 56,010 figure and this figure is simply inconsistent with the Corps' commitment to relocate all corals over 5 cm in size. The Final SEIS must clarify the Corps' coral relocation commitment, ensuring that all corals over 5 cm in size will be relocated, and provide an adequate and accurate estimate of that effort.

Moreover, the Corps' coral relocation commitment is inadequate because currently, the Corps is only committing to relocate corals in areas of direct impact and in areas of indirect impact receiving more than "5 or 10" cm of sediment.¹¹² But as stated above, NMFS has determined that any coral receiving more than 4 cm of sediment will never naturally recover,¹¹³ meaning that the Project will likely destroy any coral with over 4 cm of sediment.¹¹⁴ It is therefore arbitrary for the Corps to relocate only corals from areas with "5 or 10" cm of sediment,¹¹⁵ as areas with over 4 cm experience a similar kind of drastic harm. Moreover, the phrase "5 or 10 cm" is an opaque statement that must be clarified in the Final SEIS, preferably with a figure showing exactly which areas are subject to coral relocation.

Additionally, NMFS has stated that corals with even *1 cm or more* of sediment are no longer functioning as coral recruitment habitat – at least for some period of time until the sediment dissipates.¹¹⁶ This impact must also be acknowledged and accounted for.

Based on the reasons described above, it is highly likely that the Corps will have to relocate vastly more corals than currently estimated to meet their minimization and mitigation commitments, and to ensure coral relocation efforts are commensurate to the scope of the Project's impacts. Therefore, the Final SEIS must include an updated and accurate estimate of the coral relocation efforts required and a budget for this additional work. The increased costs of this additional relocation effort should be included in the upcoming cost-benefit analysis. Additionally, the method and assumptions by which the numbers of corals expected to be relocated were calculated should be clearly explained.

Finally, the Corps must have contingency measures in place in the event that contractors find many more corals in need of relocation than anticipated. This was a major issue at PortMiami. In late September 2013, one month before the planned commencement of dredging, the Corps directed its contractor to find 31 staghorn colonies identified in the May 2010 survey for the purpose of beginning the relocation work. Rather than finding 31 colonies, however, the

¹⁰⁹ RDSEIS, App. F, Table F-9 at F-41; RDSEIS, App. F at F-44.

¹¹⁰ RDSEIS, App. J at 50.

¹¹¹ $340,000 \times 0.3 = 102,000$.

¹¹² RDSEIS, App. F, Table F-9 at F-41.

¹¹³ NMFS Final Report, *supra* note 59 at 1, 47, 51.

¹¹⁴ *Id.* at 1, 47–48.

¹¹⁵ RDSEIS, App. F at F-41.

¹¹⁶ NMFS Final Report, *supra* note 59 at 1, 47–48.

Corps identified 243 colonies within 150 meters on the Middle Reef before they stopped counting and discontinued the survey.¹¹⁷ The discovery of 243 staghorn coral colonies created a problem because the Corps had proposed to NMFS that any staghorn corals located within the footprint of the project greater than 10 cm in size would be relocated.¹¹⁸ Also, the Corps' contract specifications required that the contractor relocate all staghorn colonies within 150 meters of the channel based on the belief that only 31 colonies existed.¹¹⁹ Only 38 of these corals were ever relocated prior to the start of construction, and the additional corals which remained near the dredging suffered poor outcomes, which constituted illegal "take" under the ESA.¹²⁰

b. Coral impact minimization and compensatory mitigation are unclear and ambiguous.

The coral relocation commitments described in the RSDEIS are ambiguous. As written, it is unclear when corals will be relocated, how many corals will be relocated, of which size classes, and in which impacted areas. Moreover, conflicting statements in the RDSEIS cast doubt on the Corps commitment to relocating all the corals identified.

For example, in Appendix F, the Corps commits to relocating all corals over 10 cm in size and all ESA-listed corals within the direct impact areas.¹²¹ But elsewhere, the RDSEIS states that the Corps intends to relocate any coral over 10 cm in size "based on priority needs."¹²² The phrase "based on priority needs" gives the Corps discretion about whether and which corals to relocate. The Final SEIS needs to harmonize these conflicting statements and clarify that the Corps is committing to relocate all corals over 10 cm in size.

The RDSEIS is likewise unclear about minimization efforts. Appendix F states: "all ESA-listed corals (regardless of size) and non-ESA listed stony corals \geq 10 cm in diameter will be relocated from areas in the Spillage Analysis anticipated to receive up to 5 or 10 cm in sediment deposition."¹²³ The "or" in this statement makes it unclear whether the Corps will relocate all corals from areas with over 5 cm of sediment or over 10 cm of sediment. It is also unclear whether this means a total of 5 additional cm of sediment on top of any existing sediment, or if this means that the total of 5 cm of sediment including dredging sediment plus existing sediments. The Corps must clarify these ambiguities in the Final SEIS and update coral relocation estimates accordingly.

Finally, it is unclear whether mitigation relocation of corals will take place before or after dredging. Appendix F states "[r]elocation for *minimization* purposes will be conducted prior to

¹¹⁷ CSA Ocean Services, *Final Report for the 30-Day Post-Relocation Monitoring Survey for Acropora Cervicornis Associated with the Miami Harbor Construction Dredging (Phase 3) Project 2* (Feb. 25, 2014).

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ NMFS, *Port of Miami Acropora cervicornis Relocation Report* (Feb. 13, 2015); Letter from David Bernhardt, Assistant Regional Administrator, NMFS Protected Resources Office to Jason Spinning, U.S. Army Corps of Engineers (May 14, 2015).

¹²¹ See RDSEIS, App. F at F-44 (stating "As part of the minimization efforts for this project, all ESA-listed corals (regardless of size) and non-ESA listed stony corals \geq 10 cm in diameter will be relocated from the direct impact area (see Table F-9).")

¹²² RDSEIS, App. F at F-41, Table F-9.

¹²³ RDSEIS, App. F at F-41.

project construction.”¹²⁴ However, the RDSEIS is silent on when relocation for *mitigation* purposes will occur. The Final SEIS must ensure that all relocation efforts occur prior to dredging.

- c. The mitigation and minimization measures should be updated to correct the ambiguities and underestimations described above, and should include contingency measures in case of relocation failure.*

Based on the ambiguities and underestimates described above, the Final SEIS should update coral relocation measures to include but not be limited to:

- All disease-free stony corals measuring 5 cm and greater;
- All disease-free ESA-listed coral species regardless of size;
- All disease-free SCTLD-susceptible coral species regardless of size;
- All disease-free coral species significantly impacted by SCTLD regardless of size; and
- All disease-free, diminutive coral species that do not reach 10 cm regardless of size.

In addition, the Final SEIS should update coral relocation measures to include relocation from:

- All direct impact areas, including the channel walls and channel itself; and
- All indirect impact areas expected to receive 4 or more centimeters of sediment based on a more accurate impact model than the current Spillage Model.

The Corps should then apply a Habitat Equivalency Analysis (“HEA”) and recapture habitat lift for all the remaining stony corals smaller than 5cm, accounting for 100% loss of function from all areas expected to receive over 1 cm of sediment based on an accurate Spillage Model. Additionally, the Corps should account for the mosaic of habitat that will be lost in direct and indirect impact areas and include them in mitigation calculations. Worksheets containing these calculations should be included in the Final SEIS so that the public can review them.

The combination of mitigation scenarios tabulated in Table F-1 should confirm the habitat lift that the compensatory mitigation projects would provide for the individual colonies and habitat that cannot be practicably relocated.

Finally, the Corps must do all in its power to ensure that coral relocation is successful, including delegating outplanting work to local organization and/or agencies. As no organization currently exists with the capacity to conduct outplanting on this scale, the Corps will therefore need to commit to building the coral restoration infrastructure for this work to be accomplished. Success criteria should be explicitly defined in the Final SEIS and vetted by agency partners. If that success criteria is not achieved, additional mitigation should be required to account for functional lift not yet achieved, with time-lag factored into calculations. This potential requirement of having to provide additional mitigation if success criteria is not achieved should

¹²⁴ RDSEIS, App. F at F-40 (emphasis added).

be captured in the forthcoming cost-benefit analysis. Financial assurances must be provided for any additional mitigation as well.

d. The Corps must use the term “Compensatory Mitigation” correctly.

Pursuant to the Corps’ regulations 33 CFR Part 332, compensatory mitigation is considered only after all practicable avoidance and minimization measures have been considered.¹²⁵ The Corps has indicated in Table F-9 that stony corals at least 5 cm in diameter can be practicably relocated.¹²⁶ Therefore, the relocation of stony corals (5cm and above) and all ESA-listed corals should be first considered minimization. Following relocations of stony corals 5 cm and up, the Corps can then consider compensatory mitigation for offsetting remaining corals too small to relocate and the array of habitats in those areas impacted. Additionally, we note that the FWC also indicated in their 2021 response to the DSEIS that relocation of corals and other organisms are considered project minimization actions and are not considered compensatory mitigation actions and the Corps concurred in their response to this comment.¹²⁷

e. The Corps must provide adequate time and notice for scientists to collect corals of opportunity.

Any coral that the Project is expected to kill but is not subject to relocation should be made available for collection by scientists. Scientists should have at least 9 months’ notice for collection efforts and should be given at least 6 months’ notice before the approved collection date. Some funding should be made available to researchers to collect and relocate corals of opportunity. At PortMiami, scientists were given only a few weeks to collect before dredging commenced, which meant that many corals of opportunity were not able to be collected due to time constraints.¹²⁸

f. The Corps must ensure adequate coral mitigation by outplanting corals at proper densities.

The Corps must ensure that all coral outplanting is done at proper densities for reproductive success. For more detail on this issue, please see our 2021 Comment Letter at Section II(G)(1)(c).

2. The Corps should consider additional minimization measures for coral.

The Final SEIS should consider additional coral impact minimization measures, as described below.

a. The Final SEIS must consider and implement a true pause in dredging during coral spawning months.

¹²⁵ 33 CFR § 332.2.

¹²⁶ RDSEIS, App. F at F-41.

¹²⁷ RDSEIS, App. K, Part I, at FWC-7.

¹²⁸ Lizette Alvarez, *Researchers Race to Save Coral in Miami*, NEW YORK TIMES (June 5, 2014), <https://www.nytimes.com/2014/06/06/us/researchers-race-to-save-coral-before-dredging-starts-in-miami.html>.

We understand that the Corps proposes to prohibit dredging from the inner channel and outer entrance Channel during the coral window (generally expected to be July-September). However, the Corps should prohibit dredging and blasting activities *in all areas* of the proposed project during the summer months, an alternative that the Corps analyzed and rejected in both the SEIS and RDSEIS.¹²⁹ The reasons for rejecting this alternative seem mostly due to project duration and cost. But the RDSEIS still fails to analyze whether sediment released from inner harbor dredging from July through September will affect coral spawning and whether this effect weighs in favor of a true pause, as raised in our 2021 Comment Letter.¹³⁰ A true pause from July to September would reduce dredging during peak coral spawning and times of highest predicted thermal stress. A summer true pause would also coincide with much of hurricane season, providing much needed protection for corals when natural sedimentation could be more severe. In addition, the Corps must also analyze how a re-start of the project after coral spawning may impact new recruits in the project area. Finally, blasting is another source of sedimentation and debris and therefore should not be allowed during the dredge window, either. The Corps should eliminate blasting from the months of July through September by updating avoidance and minimization measure 2B2 to stipulate this. For more details on this issue please see our 2021 Comment Letter at Section II(G)(1)(b).

- b. The Corps must analyze implementing non-discretionary turbidity limits that trigger shutdown and increasing turbidity monitoring as a potential avoidance and minimization measure to protect corals.*

The RDSEIS should include a mitigation measure that contains clear shutdown limits if certain turbidity thresholds are reached. Currently, adaptive management for turbidity does not include clear “shut down” limits. To protect corals, automatic “shut down” targets should be implemented. Currently, Appendix H of the RDSEIS reads: “The Corps’ contracting officer would determine if all dredging and disposal shall cease immediately.”¹³¹ The Corps must change this language to read: “All dredging and/or disposal activity shall cease if a shutdown target is reached.” This change will remove arbitrary decisions and ensure coral protection.

The Corps’ should make available turbidity monitoring data in real time to the public and should make the water quality portal referenced in Appendix H free and available to the public prior to the commencement of construction activities.

In addition, as stated in our previous comments, a limit of 29 NTUs is not protective of coral health and should be revised. Please reference again our 2021 Comment Letter at Section II(G)(d) for more details.

- c. The Corps should consider measures to minimize or mitigate the effects of decanting and dewatering.*

As stated above, the RDSEIS fails to explain the terms decanting and dewatering and whether these practices will have environmental impacts. In addition to explaining these terms

¹²⁹ DSEIS at 52; RDSEIS at 77.

¹³⁰ RDSEIS at 77.

¹³¹ RDSEIS, App. H at H-5.

and their impacts, the Final SEIS should consider and include minimization and mitigation measures to reduce harm from decanting and dewatering at the Project site.

- d. The Corps should consider alternative prohibiting overflow in all areas to protect corals.*

The 2020 DSEIS prohibited overflow from any dredge operating in the inner and outer entrance channels and the widener.¹³² But the 2022 RDSEIS now only prohibits “unconfined” overflow in these same areas.¹³³ At the same time, Figure 5 represents that no overflow is allowed in these areas.¹³⁴ The Corps must clarify this discrepancy in the Final SEIS. Moreover, unconfined overflow is still allowed in the Main Turning Basin, the Southport Access Channel, and Turning Notch.¹³⁵ This is a setback from the previous DSEIS. Overflow caused extensive fine-grained sedimentation at PortMiami, which buried corals and reef habitat. Inshore areas may support a high percentage of fines that can be carried offshore. Therefore, overflow, whether confined or unconfined, should not be allowed in sensitive environments such as Port Everglades. The Corps should revise Figure 5 to clarify that no overflow from any dredge method will be permitted in any location. The Corps should revise Section 2.3.1.2 and Section 2.5 to reflect that overflow will not be allowed.

- e. The Final SEIS must clarify “de minimus” and “trend of material loss” with respect to scows transporting material.*

The RDSEIS has stated that if a particular scow demonstrates a trend of material loss that does not resolve itself after seal testing and repair, the scow is removed from the dredging operation.¹³⁶ The RDSEIS also states that no more than a “de minimis” loss of material will occur near protected resources during transit.¹³⁷ The Corps must first define the term “de minimis” with a quantitative metric. Then, the Corps should clarify that if a scow loses this amount of material more than twice it will be removed from dredging operations. Moreover, an operational threshold should be established such that if weather and sea conditions are expected to cause scow sloshing, then scow transport of dredge material should be halted. Further, the Corps must define with the EPA where the “start” of the loss material shall be counted from – either the location of dredging or the end of the channel, as this was an issue at the PortMiami project.¹³⁸

3. The RDSEIS’s seagrass mitigation is insufficient.

Seagrass losses around the state have been dire in recent years. It is imperative to protect, restore, and fully mitigate for such losses. As such, the Corps must mitigate for all seagrasses in the direct project footprint, including within the design contours of the existing channel. Appendix D states, “present Corps’ policy states that impacts to seagrass within an authorized

¹³² DSEIS at 54.

¹³³ RDSEIS at 67.

¹³⁴ *Id.* at 50.

¹³⁵ *Id.* at 67.

¹³⁶ *Id.* at 189.

¹³⁷ *Id.*

¹³⁸ Letter from James Giattina, Director, U.S. Environmental Protection Agency Water Management Division, to Eric Summa, Chief, U.S. Army Corps of Engineers Environmental Branch Planning Division (June 5, 2015).

dredged channel that have previously completed EFH coordination do not require additional compensatory mitigation.”¹³⁹ The policy document for this statement was not referenced in the RDSEIS; the Corps should directly reference this item in the Final SEIS as well as the referenced EFH coordination letter. Moreover, the Corps improperly concluded that sedimentation from dredging will not impart indirect impacts to adjacent seagrass habitat and therefore has not proposed compensatory mitigation.

The Corps should mitigate for all functions and values lost during construction, whether by direct or indirect impact. The Corps must offset all seagrasses within the direct dredge footprint, including those in the existing channel by compensatory mitigation. The proposed channel deepening may lower depths contours such that light transmission to the channel floor no longer imparts enough photosynthetically active radiation for species to persist. Moreover, if post-construction surveys indicate that seagrasses have been degraded or lost by construction activity, then the Corps should provide additional mitigation for those losses. This consequence should be captured in the forthcoming cost-benefit analysis, and an additional mitigation area should be verified to be able to accommodate the worst-case scenario of turbidity measures failing, impacts caused by construction barges, and widespread seagrass degradation. Financial assurances for additional compensatory mitigation need to be specified in the Final SEIS.

NMFS commented in response to the 2020 DSEIS that West Lake Park (WLP) would not fully offset Port Everglades impacts based on preliminary scaling of the mitigation requirements.¹⁴⁰ The Corps responded in Appendix K of the 2022 RDSEIS that, under a Department of the Army Permit, West Lake Park Segment IV offers 4.032 seagrass units available to offset seagrass losses incurred by the project (calculated to be 2.88 UMAM credits).¹⁴¹ The success criteria for seagrass creation at WLP is a Braun-Blanquet Cover Abundance score of 1, which is equivalent to individual shoots imparting less than 5% cover. In contrast, Appendix D notes that the average seagrass cover was around 17% within the Intracoastal Waterway and inlet and slightly over 7% offshore.¹⁴² Since the Corps has not provided full UMAM scoresheets for either the impact areas or the mitigation creation areas, it is not possible for the public to confirm that the impact and mitigation areas are assessed to the same standards. The Corps should include these worksheets in the FEIS. Moreover, the Corps should strive to provide compensatory mitigation that does not create lower-value community structure than the impact site.

4. The Final SEIS must implement improvements to the monitoring plan.

As stated in our 2021 Comment Letter, the Final SEIS should analyze and implement improvements to the monitoring plan. Specifically, the Corps should 1) monitor a greater distance from the channel to capture possible unanticipated impacts; 2) monitor more frequently than 3–4 times a year; 3) define sedimentation indicators more clearly in the Final SEIS; and 4) ensure data management is transparent, easily accessible, accurate, and organized. A third party on a separate contract should review and provide oversight of the data collected by the environmental monitoring firm. Another party still should be responsible for peer-reviewing and

¹³⁹ RDSEIS, App. D at D-23.

¹⁴⁰ RDSEIS, App. K, NMFS-18.

¹⁴¹ *Id.*

¹⁴² RDSEIS App. D at D-13.

analyzing and reports. For more details on these suggestions, please see our 2021 Comment Letter at Section II(G)(5). In addition, the Corps should incorporate additional instrument stations in its monitoring plan and implement satellite monitoring of construction, as detailed below.

- a. *The Corps and its designated contractors should record instances of coral disease in all biological monitoring surveys and shut-down triggers should be incorporated into the adaptive management plan.*

During any diver deployment for biological monitoring, instances of disease on stony corals should be noted. Divers should collect information on the presence of disease, type of disease and percent of the colony with visually apparent signs of disease. In addition, surveys should examine and record the disease margin and discern whether the disease is progressing fast or slow.

The Corps should design a biological trigger to inform shutting down dredge operations if disease, and in particular STCLD, is found to worsen in comparison to baseline conditions.

- b. *The Corps should incorporate additional instrument stations into its fixed-station monitoring plan.*

We appreciate that the 2022 RDSEIS proposes a full year of data collection prior to dredging to help establish baseline water quality and hydrodynamic conditions for the project area.

However, in the footnote following Table H-1, the Corps acknowledges the low level of replication of instrument stations across the project area. Appendix H also indicates that the Corps may consider more real-time buoys across the project area if costs allow. But replication is essential in building confidence in results and should not be reviewed as an optional expense. The Corps should incorporate additional fixed monitoring stations as part of the project plan and include their locations and specifications in an updated Appendix H. Instruments should also be placed further than 2000m. Instruments will need to be maintained and serviced on a regular schedule. In addition, the Corps should adopt the National Marine Fisheries Service's suggestion in comment (NMFS-11) in Appendix K, Part I, which recommended that the Corps re-program the monitoring sites to include Acoustic Doppler Current Profiler current meters with real-time data transmission, as this would greatly facilitate adaptively managing the project.

- c. *The Corps should implement satellite monitoring of construction.*

The RDSEIS addresses findings regarding sediment plume and turbidity from Barnes et al. (2015) but does not recommend utilization of satellites for turbidity monitoring.¹⁴³ Cunning et al. (2019) shows that benthic impacts can be linked with high correlation to satellite imagery and plume locations.¹⁴⁴ Therefore, satellite monitoring combined with in situ monitoring could be a very useful and independent tool for turbidity limits. We understand that lower orbit satellites with adequate resolution may have some limitations, although if they are providing imagery

¹⁴³ RDSEIS at 229; RDSEIS, App. K at MW-59.

¹⁴⁴ Cunning, *supra* note 10.

approximately every two weeks,¹⁴⁵ then this tempo is still an improvement over the proposed fixed monitoring stations. Moreover, we are aware of at least one satellite monitoring service (planet.com) that offers near real-time images taken by satellites orbiting the earth every 90 minutes. While we are in no way endorsing a specific company, we wish to note that the two-week tempo may be much shorter due to advances in satellite monitoring. Given that many of the proposed fixed monitoring stations also have their limitations in that data from non real-time stations will be downloaded about once every 45 days, we continue to maintain that satellite imagery is a valuable monitoring tool to complement other approaches that the Corps admits have a low level of replication across the project area.

5. The Final SEIS must include functional assessment scoresheets upon which mitigation is predicated.

The Final SEIS must include functional assessment scoresheets upon which mitigation is predicated. The Corps responded to our previous February 2021 Comment Letter on this subject in the RDSEIS Appendix K, Part I, stating that “The Corps’ impact and functional assessment is based on the best available science and data, and is disclosed in Appendix D.” We note that no actual score sheets for any functional assessment were included. In addition to summary tables in the narrative of Appendix D, the Corps must append the actual score sheets for coral and seagrass impacts for disclosure to the public.

6. The Final SEIS must properly address mitigation for unanticipated impacts.

The mitigation plan for unanticipated impacts, including the triggering or worsening of a disease outbreak and a great-than-expected indirect impact area, must be detailed before the Project begins and be explicit in the final dredging contract. We appreciate that the Corps and the County take responsibility for unpermitted impacts, but the details of this arrangement must be clearly outlined for the public. Who will fund unexpected mitigation? How will it be calculated? How will a mitigation plan be developed? What is the responsibility of the dredging company who is carrying out the work? The Corps should also waive sovereign immunity to allow DEP to enforce their permit terms. In addition, what is the timeframe for the mitigation implementation? It has been over 5 years since the project ended at PortMiami, and no impact assessment or mitigation plan has yet been developed, let alone mitigation implemented. There is no required deadline for doing so, either. This is a key “lesson learned” from PortMiami that must be included—in detail—in the Final SEIS. The Corps should update Appendix F Mitigation Plan and Appendix H to address these and other issues per our previous comments at Section II(G)(2).

III. CONCLUSION

Thank you for your consideration of these comments. We find that this RDSEIS is premature and has been presented without key analyses completed. Many of our prior comments, and those of members of the Interagency Working Group, have not been incorporated. We therefore ask for an additional draft DSEIS for public review. We urge the Corps to protect the

¹⁴⁵ RDSEIS, App. K at MW-59.

coral and marine resources of Fort Lauderdale as they have significant economic, recreational, and cultural value by implementing the recommendations that are set forth in this letter.

Sincerely,

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Enclosures (7 attachments)