The Honorable Mayor Francis Suarez
Mayor
City of Miami
3500 Pan American Dr.
Miami, FL 33133-5504

Dear Mayor Suarez,

The undersigned organizations are writing in objection to the proposed City of Miami ordinance, 11938, that would amend Chapter 38 of the City Code to establish certain requirements for City park and recreation waterfront improvements. We urge you not to pass this ordinance because it conflicts with existing environmental regulations and will not prevail against them. It also precludes the full array of possible project designs for shoreline improvement projects. Moreover, we would like to explain the multitude of vital benefits that mangroves confer to our community, environment, and economy. Last, we offer some constructive recommendations for resilient waterfront improvement projects to provide maximum value to the public.

Proposed ordinance and its effects:

The ordinance states that the purpose of this Article is to establish requirements for waterfront improvements at waterfront City parks and to “preserve waterfront views” for the parks. The language in the proposed ordinance would require waterfront improvement projects on City parks adjacent to Biscayne Bay or the Miami River to require the following:

1. All seawalls and bulkheads must be constructed on the shoreline and not inland;
2. Mangroves and tall-growing plants are prohibited from being planted in the water and on upland areas adjacent to the shoreline.

This ordinance would compel areas with vertical seawalls to stay as such, foreclosing options for resilient project designs. At shorelines currently without vertical armoring, this ordinance would appear to preclude upland alternatives in that it would require waterfront improvements to occur at the shoreline and therefore within the Biscayne Bay Aquatic Preserve, where sensitive resources like mangroves often already exist. For instance, if waterfront improvements were proposed at Kennedy Park, this ordinance would appear to force the project impacts to occur on existing mangroves at the shoreline. (We believe there is some confusion in terms. Seawalls and bulkheads are, by definition, constructed at the waterline. A landward structural feature holding the land is called a “retaining wall”. After speaking with City staff, we understand that the intention of this verse is to prohibit landward bank stabilization by prohibiting structures such as upland retaining walls.) Lastly, this ordinance would prevent a coastal engineer from integrating mangroves in a shoreline defense strategy which would cheat the City a proven shoreline protection strategy that also simultaneously provides an array of other benefits.

We would like to inform you of the unintended consequences if the ordinance were to be passed.
City parks fronting Biscayne Bay and natural waterways are subject to Biscayne Bay Aquatic Preserve Regulations.

The Biscayne Bay Aquatic Preserve is codified at 258.397 F.S. and 18-18 F.A.C. The Boundaries and Scope of the Preserve include all publicly and privately owned submerged lands, the water column over such lands, and publicly owned islands.\(^1\) The Preserve consists of natural waterways tidally connected to the Bay, such as the Miami River, and stops at the surveyed mean high water line.

The intent of the Aquatic Preserve Rule is to preserve and enhance Biscayne Bay in its essentially natural conditions to maintain its biological and aesthetic values.\(^2\) The Rule defines “essentially natural conditions” as “those conditions which support the continued existence or encourage the restoration of the diverse population of indigenous life forms and habitats to the extent they existed prior to the significant development adjacent to and within the preserve.” The Preserve is administered and managed in accordance with certain goals, including:

- Encouragement of activities that protect or enhance the biological and aesthetic values of the Preserve, including the modification of existing manmade conditions towards their natural conditions.\(^3\)
- “Aesthetic value” is defined as “scenic characteristics or amenities of the preserve in its essentially natural state or condition...”.\(^4\)
- Preservation of and promotion of indigenous life forms and habitats, including mangroves.\(^5\)

Other governmental agencies, including counties and municipalities, can impose their own requirements provided that such requirements or authority are consistent with the Act and these rules.\(^6\)

If the City wishes to fortify shorelines at and below the mean high water line at City parks, the City will need to apply for a permit from the Florida Department of Environmental Protection to do so and ascertain authorization from the Aquatic Preserve\(^7–\)this is required irrespective of whether lands at and below the mean high water line are owned by the City.\(^8\) The project proposal needs to be consistent with Preserve rules for FDEP approval.\(^9\) Specifically, the preserve rules at 18-18.006(3)(b) state that there shall be no further use, sale, lease, or transfer of interests in lands held by the Board of Trustees of the Internal Improvement Trust Fund unless an applicant affirmatively demonstrates that:

- An extreme hardship exists\(^10\)
- The project is in the public interest\(^11\)

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\(^1\) 18-18.002(1), F.A.C.,
\(^2\) 18-18.001(1), F.A.C.,
\(^3\) 18-18.001(4)(e), F.A.C.,
\(^4\) 18-18.004(3), F.A.C.,
\(^5\) 18-18.001(4)(f), F.A.C.,
\(^6\) 18-18.013(3), F.A.C.,
\(^7\) 18-18.006(1), F.A.C.,
\(^8\) 18-18.007(2), F.A.C.,
\(^9\) 18-18.006(3)(d), F.A.C.,
\(^10\) 18-18.006(3)(b)(i), F.A.C.,
\(^11\) 18-18.006(3)(b)(ii), F.A.C.,
○ The project is consistent with the Aquatic Preserve Rules\textsuperscript{12}
○ Shoreline protection structures within the Preserve are the only practicable alternative; there is no other reasonable alternative that would allow the proposed project to be constructed or undertaken outside of the Preserve \textsuperscript{13}

\textbf{This proposed ordinance is contrary to the intent of the Aquatic Preserve laws.}

Prohibiting mangrove shorelines directly contradicts the intent of the aquatic preserve rule: to restore and enhance the essentially natural conditions (ergo, mangrove shorelines) that existed prior to significant development.

\textbf{This ordinance would make it extremely difficult, if not impossible, to acquire environmental permits.}

As proposed shoreline improvement projects would need to go through regulatory review, they would need to demonstrate that they meet State regulations at 18-18 F.A.C. and 18-21 F.A.C. Our understanding is that the State rule would prevail over the ordinance.

The project design would need to be proven to be in the public interest so would have to show that the social, environmental, and economic benefits of a new vertical seawall or bulkhead at the shoreline—and potentially on top of existing, state-protected mangroves—would outweigh the costs of planting mangroves and/or some combination of upland rip rap/retaining walls as part of the project design. The environmental regulatory community at local, state, and federal levels well knows that seawall refract wave energy, increasing wave height and keeping the bay turbulent, murky, and unhealthy. By contrast, living shorelines such as mangroves absorb wave energy, allowing more sediment to settle. New vertical bulkheads and seawalls will be a hard public interest sell when they have cumulatively changed the bay for the worse.

The project design would need to prove that it is “water dependent”. This is defined in 18-21 F.A.C. as “an activity which can only be conducted on, in, over, or adjacent to water areas because the activity requires direct access to the water body or sovereign submerged lands for transportation, recreation, energy production or transmission, or source of water, and where the use of the water or sovereign submerged lands is an integral part of the activity”.\textsuperscript{14} Bank stabilization is not a water dependent activity (it does not need water to fulfill its intrinsic purpose as a boat dock would). A retaining wall can be built in the uplands while mangroves, other appropriate vegetation can be placed waterward. Moreover, the City would have to prove that there are no other reasonable alternatives outside the Preserve (i.e. upland) that exist. Waterfront parks like Kennedy Park, Peacock Park, and Morningside Park all contain sufficient room above the waterline and beyond the mangrove fringe to install upland structures like retaining walls and rip rap beads to help combat storm surge.

With respect to extreme hardship, Chapter 18-18 indicates that “self-imposed actions” would haunt the City. Verse states: “Extreme hardship under this act shall not be construed to include any hardship which arises in whole or in part from the effect of other federal, state or local laws, ordinances, rules, or

\textsuperscript{12}18-18.006(3)((b)(III), F.A.C.,
\textsuperscript{13}18-18.006(3)(b)(V), F.A.C.,
\textsuperscript{14}18-18.006(3)(b)(V), F.A.C.,
Therefore imposing a requirement for vertical seawalls and precluding other options would not be admissible under this rule as an “extreme hardship”.

When projects like new seawalls with backfill undergo permitting through the Army Corps of Engineers, they are reviewed under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Section 404(b)(1) Guidelines16 compel the applicant to rebut the presumption that there exists an upland alternative that would have less environmental impact. Additionally, the Corps’ Section 404 review requires an applicant to find the Least Environmentally-Damaging Practicable Alternative; that is what will get permitted. Therefore, the ordinance’s preference for seawalls/bulkheads at the shoreline and no mangrove plantings could be picked apart by the Corps and potentially denied through a cumbersome permitting process. Yet the Corps also has authorized a Nationwide Permit efficiency for living shorelines under the Nationwide 5417, which expedites those cumbersome regulatory timeframes. This ordinance would prevent the City from pursuing a regulatory “easy button”.

Proposing vertical seawalls over mangroves would compel expensive mitigation at federal, state, and local permitting levels. Further complicating matters, prohibiting mangrove plantings in parks would also preclude any on-site mitigation opportunities for projects and could backfire on the City in certain circumstances (for instance, where mitigation credits are sold out, when the City may be required to do mitigation themselves for a project, or when the City wants to do a mitigation project on behalf of a third party).

**Mangroves provide significant benefits, including shoreline stabilization and surge protection.**

Mangroves are vital to the Bay's health and the safety of the community, and there is no substitute. According to Gary Milano (who led DERM's Coastal Enhancements section before retiring after 35 years of service), planting mangroves is the single most important thing that we can do to bring Biscayne Bay back to a healthier state. They are the ideal buffer zone. They trap sediment from the land and improve water quality and water clarity by filtering runoff from upland areas.18 They break up waves and absorb their energy, reducing the turbulence that keeps Bay waters unnaturally murky. They also protect the land from the Bay during storms by breaking up the waves before they can reach further inland18. Mangroves provide the primary productive food base of estuarine systems and are among the most productive plant communities found in the world. They provide habitat for 1,300 species of animals including 628 mammals, birds, reptiles, fish, and amphibians, including Florida state- and federally-protected endangered and threatened species, as well as species of special concern18. These values are so important to the State of Florida that they are protected by statute for the following reasons:

*The Legislature finds that mangroves play an important ecological role as habitat for various species of marine and estuarine vertebrates, invertebrates, and other wildlife, including mammals,*

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15 18-18.004(11), F.A.C.,
16 40 CFR § 230
17 The Nationwide 54 requires the project design to have a substantial biological component, and, where fringe wetlands are proposed, appropriate native plants must be used. Mangroves would be appropriate for our region. Reference the Federal Register for the NW 54 [https://www.federalregister.gov/documents/2017/01/06/2016-31355/issuance-and-reissuance-of-nationwide-permits](https://www.federalregister.gov/documents/2017/01/06/2016-31355/issuance-and-reissuance-of-nationwide-permits) and its regional conditions at [https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/7014](https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/7014)
Bringing back mangroves would behoove our communities. Mangroves are already being used successfully for nature-based coastal defenses in Southeast Florida. The Nature Conservancy authored a review of seven case studies of green infrastructure integrated into restoration projects along the Atlantic coast of Florida. The “green” components were determined by the features naturally found at each area. One project in particular, the West Lake Park Mitigation and Restoration Project in Broward County featured installing riprap and planting of 13 acres of mangrove wetlands. This project is considered a great success.

The beneficial effects of mangroves are not just limited to large acreages in pristine areas. Urban mangroves—those that are located in and around cities—also provide a multitude of benefits.

Mangroves in urban areas:

- Provide habitat for wildlife from birds to commercially and recreationally important fish species
- Create green space in populated areas
- Remove nutrients from waterbodies
- Help slow effects of storm surge and flooding

Restoration of even small mangrove areas can provide significant ecosystem services to residents.

**Mangroves Offer Significant Greenhouse Gas Sequestration**

Mangroves, salt marshes, and seagrasses are the most dominant blue carbon sinks in Florida. (Blue carbon refers to organic carbon stored in marine ecosystems over long time spans.) Since mangroves have substantial canopy and biomass, they have the ability to sequester more carbon than salt marshes or seagrasses. Globally, mangroves average approximately as much carbon dioxide sequestration per hectare as tropical rainforests do. One study found that the value of carbon sequestration that mangroves in the Caribbean provided was $6.7 billion per year. In a city that is ground-zero for sea level rise, we should be the leaders in adapting to and mitigating the effects of climate change. This ordinance would directly conflict with the City of Miami’s Greenhouse Gas Reduction Plan, which aims to be carbon-neutral by 2050; it would propel Miami *backward on its goal*.

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19 403.9322(2), F.S.,
Rip rap placed at the base of a seawall will not accrue an oyster reef under present conditions. The ordinance encourages artificial reefs and oyster reefs so as “to increase fish population and improve a body of water’s environmental health”. However, this rationale does not consider the local state of our Bay. Historically most oysters grew on mangrove roots (not on “reefs”). Now, only about 1% of our local historic oyster populations survive because humans destroyed the mangroves and other conditions that made life possible. Because hydrological alterations, Biscayne Bay does not get enough freshwater flow to support robust oysters. Therefore, the Bay and many of its natural waterways are presently too salty today to support reef building oysters.  

Mangroves are vital to support recreational and commercial fisheries

Oysters and artificial reefs can never substitute for the many vital roles of mangroves. For example, over 70% of Florida's seafood and gamefish require mangroves in their life cycles. Sadly, most of the mangroves in North Biscayne Bay were wiped out over the past 100 years.

Constructive Recommendations

It is true that public access to Bay views is important. The good news is that we can have both mangroves and views. The 1996 Mangrove Trimming and Preservation Act allows mangrove trimming and alterations, including windowing, to preserve viewsheds. Regulations pursuant to this act allow for mangrove trimming such that the health of the tree and the habitat it confers can be preserved while allowing for people to view adjacent waterways. Areas that will require trimming to maintain vistas can be designated through a proactive covenant with state and county regulatory agencies.

We fully support responsible public access to our water. The City could also consider upland viewing platforms and elevated boardwalks. These would allow pedestrians to traverse beyond the mangrove fringe. Provided that these structures can meet regulatory requirements and can demonstrate environmentally-friendly designs (for instance by including light transmissive decking and narrow width), pile-supported platforms could provide both bay views and an immersive, educational and recreational experience by allow pedestrians to walk through a lush and verdant vegetative fringe.

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25 L. Eldrege, Biscayne Bay Aquatic Preserve Manager (personal communication, May 25, 2022).
27 Sections 403.9321-403.9333, F.S.,
Conclusions:
The City should not prevent mangrove planting at City parks nor should seek to build seawalls where mangroves are already present:

● State laws and regulations at 258.397 F.S. and 18-18 F.A.C. will prevail over this ordinance.
● This ordinance would force project designs that could make it very difficult, if not impossible, to get through the environmental permitting process. Stalled projects could cost the City a lot of money.
● Mangroves offer a multitude of human and environmental benefits that would maximize the full use and enjoyment of City park land.
● Mangroves help to reduce waves and slow the effects of storm surge
● Mangroves provide greenhouse gas sequestration
● Mangroves are vital to healthy fisheries and the fishing industry
● Mangroves help the City of Miami meet its greenhouse gas reduction targets. Oyster reefs will not survive in Biscayne Bay’s current water conditions
● The City can get mangrove trimming permits to preserve viewing corridors. It could also consider pile-supported structures to allow people to view the bay beyond the mangrove fringe.
● The coastal engineers and consultants are the appropriate professionals to recommend the best shoreline protection strategy and need every tool available as our coastline changes. They should not be hamstrung by a proscriptive ordinance that prohibits one of our best resiliency tools while adding additional and contradictory bureaucratic red tape.

Signed,

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Urban Paradise Guild

Dr. Rachel Silverstein
Executive Director & Waterkeeper
Miami Waterkeeper

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