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NO. LTC # **338-2016**

LETTER TO COMMISSION

TO: Mayor Philip Levine and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: August 16, 2016

SUBJECT: Indian Creek Drive Flooding Mitigation Project



The purpose of this Letter to Commission is to provide an update on the status and the construction and mitigation phasing of the Indian Creek Drive Flooding Mitigation Project.

At the end of the summer, the City's Public Works Department, in partnership with the Florida Department of Transportation will begin construction along Indian Creek Drive/SR A1A between 25 Street and 41 Street. The scope of work includes installing a pump station and new drainage, upsizing existing sections of the stormwater system, rebuilding and raising the public seawall, creating a living shoreline, raising the elevation of the roadway and sidewalk, as well as other associated roadway improvements. The design/build project is anticipated to last one year and will cost approximately \$25 million.

The purpose of this project is to protect the state roadway, which is a designated hurricane evacuation route, and the adjacent properties from flooding. The existing gravity system is insufficient to manage the stormwater in this drainage basin and needs to be upgraded with a pump station and larger structures. Additionally, the seawall along the western edge of Indian Creek Drive was constructed at a low elevation and is beginning to fail, allowing water from Indian Creek to overtop the seawall during high tides and making the low roadway unpassable during higher than normal tides. If the seawall continues to deteriorate and collapses, the structural integrity of both the shoreline and the roadway may also be compromised and can threaten the water quality in Indian Creek as large volumes of sediment are released into the waterway. The roadway and seawall must therefore both be reconstructed and elevated to a higher elevation that minimizes flooding and allows access through this corridor, particularly for emergency vehicles.

Project Phasing

Phase I – Roadway and Seawall Construction

At this time the project is under review by Miami-Dade County's Division of Environmental Resources Management (DERM), the South Florida Water Management District (SFWMD) and the U.S. Army Corps of Engineers (USACE) for permitting. Based on existing conditions along the project corridor, the project was submitted for their review and approval in three separate segments:

- 25th Street to 26th Street
 - Segment has no wetland vegetation and does not interface with private property.
 - Applications for DERM and delegated USACE approval have been submitted to the County.
 - Application for SFWMD approval has been submitted.

- 26th Street to 41st Street – Sections of Publicly-Owned Shoreline
 - Shoreline has substantial wetland vegetation, particularly concentrated between 26th Street to just north of 27th Street.
 - Segment is limited to City-owned street-ends and sections of roadway that do not interface with private property.
 - Applications for DERM and SFWMD approvals have been submitted.
 - Two applications have been submitted for USACE approval: one for the sections with wetlands and one for the sections with no wetlands.

- 26th Street to 41st Street – Sections of Privately-Owned Shoreline
 - Shoreline has intermittent wetland vegetation.
 - Roadway interfaces with privately-owned shoreline. Individual building presentations and meetings are underway with property owners to discuss the option to deed out parcels to the City.
 - Modifications to previously submitted DERM and SFWMD approvals will be submitted at the conclusion of these discussions.
 - The USACE does not evaluate ownership so the two applications already submitted for this project include the proposed improvements to these sections.

Construction will progress from segment to segment as the permits are issued for each. Due to the lack of wetlands and private property from 25th Street to 26th Street, this segment is anticipated to receive its permits and thus begin construction first.

Phase II – Mangrove Mitigation

As part of the permit application process, City staff and our environmental consultants surveyed the project area with DERM, SFWMD, and the USACE to identify existing vegetation and evaluate alternatives that avoid and minimize impacts to this vegetation, especially to wetland species such as mangroves. Based on our review, we determined there are mangroves growing along the shoreline of the project, which thrive landward of the seawall because its low elevation and rundown condition allows the area between the roadway and seawall to be tidally flushed on a regular basis (**Attachment**). The installation of a new and higher seawall to address roadway flooding will, by its very nature, stop this tidal flushing. Therefore, even if the mangroves are protected during construction, they are unlikely to survive and will require mitigation.

As discussed at the April 12, 2016 public meeting for this project, one of the City's top priorities for this project is to protect the existing mangroves and, where unavoidable, replace the mangroves on-site by creating a living shoreline. Typically, projects that require mitigation will pay into a mitigation bank rather than provide on-site mitigation because it is easier, cheaper and quicker to get approved. However, mitigation bank payments are used to create habitat outside of our city limits so, over time, our community has experienced a net loss in habitat. This project presents an excellent opportunity to create habitat in Miami Beach, while meeting our mitigation requirements. To this end, City staff has worked closely internally, as well as with the regulatory agencies toward that goal and has had numerous conversations with the three

regulatory agencies on a proposed living shoreline that will count toward mitigation for this project.

Existing environmental regulations make it very challenging to quickly permit living shoreline concepts. For example, while the USACE is willing to work with the City on permitting a living shoreline, filling Indian Creek along the new seawall to create suitable conditions for mangroves will first require formal consultation with the National Marine Fisheries Service (NMFS) – a six month to one year process – to evaluate potential impacts to Johnson’s seagrass critical habitat. Additionally, the living shoreline design will need to be approved as mitigation by DERM and permitted by DERM and SFWMD.

The City needs to begin the seawall work immediately to protect public safety and our infrastructure from flooding, particularly in light of the coming King Tides. As such, DERM is willing to issue us a permit that allows the seawall work to commence now as Phase I of the project, while giving us the time the City needs to sort out the mitigation concept’s longer permitting timeframe as Phase II. DERM knows it is our intent to reestablish wetland and native upland vegetation similar to what currently exists and that we are looking to compensate the unavoidable impacts to wetland vegetation on-site through the establishment of some form of living shoreline.

This is yet another complex issue in a low-lying, built out, coastal community adapting to sea level rise. The intricacies of this project illustrate how each project needs a comprehensive and balanced review to facilitate risk reduction, consider public safety, and protect our natural resources. Mangrove wetlands are critical to our local ecosystem and our community’s long-term resiliency. Therefore, as we design and construct projects, we are focused on protecting existing mangroves, on adding mangroves wherever possible, and on mitigating any unavoidable mangrove impacts on-site. Once completed, this project will allow us to showcase how this and other flood mitigation projects are a great opportunity to use green infrastructure as part of our sea level rise adaptation. Furthermore, it will be an exemplary resiliency project that can be used as a roadmap by other communities facing similar climate change issues.

Please do not hesitate to contact me if you have any questions.

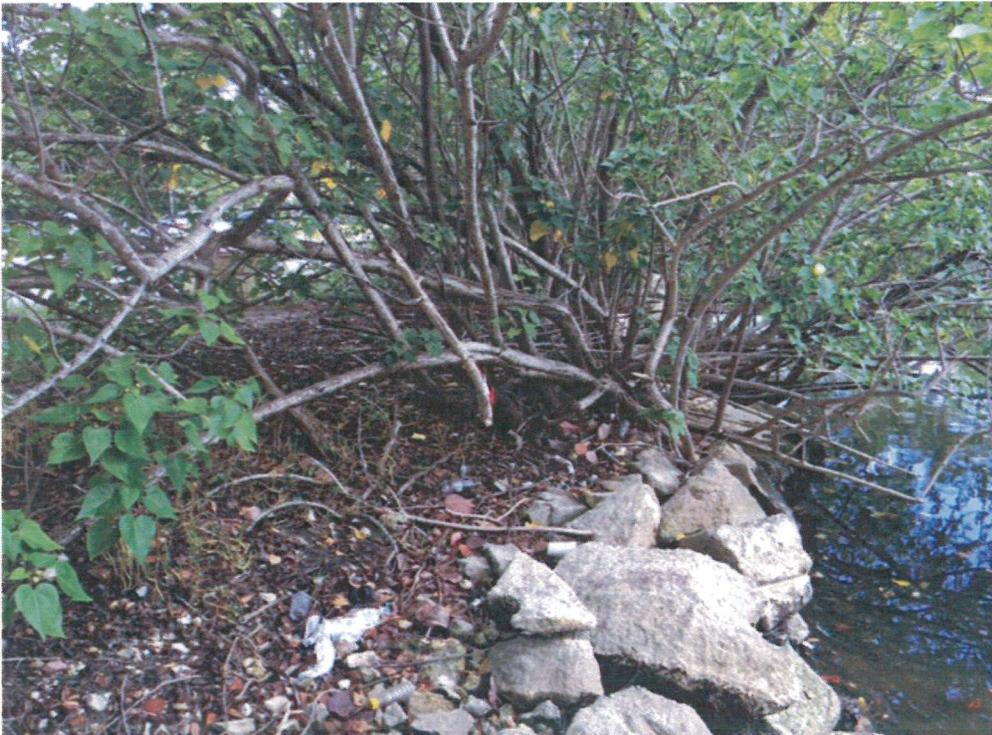
Attachments: A – Existing Shoreline Conditions

ST/ESW/MKW

Attachment A – Existing Indian Creek Drive Shoreline Conditions



Section north of 27th Street showing deterioration of the existing seawall, as well as invasive species and wetland species growing along the shoreline



Section north of 27th Street showing deterioration of the existing seawall, as well as invasive species and wetland species growing along the shoreline



Section south of 27th Street showing the low elevation of the existing seawall, as well as wetland species growing along the shoreline



Section south of 27th Street showing the low elevation of the existing seawall and its proximity to the state roadway and hurricane evacuation route.