**RESOLUTION NO. 2019-30950**

**A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, ACCEPTING THE RECOMMENDATION OF THE FINANCE AND CITYWIDE PROJECTS COMMITTEE AT ITS JUNE 28, 2019 MEETING, AND AUTHORIZING THE ADMINISTRATION TO PROCEED WITH THE DEVELOPMENT OF A BIOSWALE PILOT PROJECT WITHIN THE WEST 59TH STREET RIGHT-OF-WAY, BETWEEN ALTON ROAD AND BISCAYNE BAY.**

**WHEREAS,** the City of Miami Beach is investigating the use of stormwater infrastructure best management practices to improve water quality of the City's stormwater discharges into Biscayne Bay, designated an Outstanding Florida Water by the Florida Department of Environmental Protection; and

**WHEREAS**, a bioswale, a manmade swale typically vegetated and mulched with engineering soils below the surface, can be deployed to address both water quality (treatment) and water quantity (attenuation); and

**WHEREAS**, the City is seeking to implement a bioswale pilot project ("Bioswale Project"), as a mean to test the efficacy and value of this technology, to provide water quality improvements and attenuation of the runoff from developed areas of the City; and

**WHEREAS**, the La Gorce neighborhood, West 59th Street between Alton Road and Biscayne Bay, was targeted for this pilot Bioswale Project; and

**WHEREAS**, a bioswale can provide certain benefits and limitations, as more fully delineated in the Commission Memorandum accompanying this Resolution; and

**WHEREAS**, on June 5, 2019, the City Commission referred this item to the Sustainability and Resilience Committee (SRC), and to the Finance and Citywide Projects Committee (FCWPC); and

**WHEREAS**, at the June 26, 2019 meeting of the SRC, the SRC expressed full support for the Bioswale Project, inclusive of pedestrian access leading to the Biscayne Bay; and

**WHEREAS**, at the FCWPC's June 28, 2019 meeting, the FCWPC expressed full support for the project, recommended funding the proposed Bioswale Project from the stormwater bond program and directed City staff to look for ways to lower the cost of the proposed project; and

**WHEREAS**, the FCWPC also requested the City to coordinate with the FDOT Alton Road Project, and to identify potential locations for a FPL transformer to be located in the area, in the event that Upper North Bay Road residents approve the undergrounding of the power lines in their neighborhood; and

**WHEREAS**, the City's design engineer is identifying value engineering options, with a potential to reduce the cost of the Bioswale Project by as much as $200,000, from the original cost estimate of $850,000 to $650,000, provided that such options do not sacrifice the treatment and attenuation capacities of the Bioswale Project as originally contemplated; and

**WHEREAS,** City staff anticipates that the Bioswale Project may be impacted the following future projects, especially along 59 Street between Alton Road and North Bay Road: Alton Road Reconstruction Project; the La Gorce Neighborhood Improvement Project; and with the FPL undergrounding project, if approved by the neighborhood; however, as the earliest that these other

projects are anticipated to be constructed is within five (5) years, by that time, the City would have had the benefit of verifying the efficacy and value of the proposed pilot Bioswale Project, which is the main intent of the pilot Bioswale Project.

**NOW, THEREFORE, BE IT DULY RESOLVED BY THE MAYOR AND THE CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA,** that the Mayor and City Commission hereby accept the recommendation of the Finance and Citywide Projects Committee at its June 28, 2019 meeting, and authorizing the Administration to proceed with the development of a bioswale pilot project within the West 59th Street right-of-way, between Alton Road and Biscayne Bay.

**PASSED AND ADOPTED** this 11 day of September, 2019.

Dan Gelber, Mayor

**ATTEST:**

9/16/19

Rafael Granado, City Clerk

MIAMI BEACH INCORPORATED MARCH 26TH 1915

APPROVED AS TO
FORM & LANGUAGE
& FOR EXECUTION

8/28/19

City Attorney Date

MIAMIBEACH

# COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission
FROM: Jimmy L. Morales, City Manager
DATE: September 11, 2019

SUBJECT: A RESOLUTION OF THE MAYOR AND CITY COMMISSION OF THE CITY OF MIAMI BEACH, FLORIDA, ACCEPTING THE RECOMMENDATION OF THE FINANCE AND CITYWIDE PROJECTS COMMITTEE AT ITS JUNE 28, 2019 MEETING, AND AUTHORIZING THE ADMINISTRATION TO PROCEED WITH THE DEVELOPMENT OF A BIOSWALE PILOT PROJECT WITHIN THE WEST 59TH STREET RIGHT-OF- WAY, BETWEEN ALTON ROAD AND BISCAYNE BAY.

## RECOMMENDATION

The Administration recommends approving the Resolution.

## ANALYSIS

The City of Miami Beach is investigating the use of stormwater infrastructure best management practices to improve water quality of the City's stormwater discharges into Biscayne Bay which designated an Outstanding Florida Water by the Florida Department of Environmental Protection.

Bioswales, a manmade swale typically vegetated and mulched with engineering soils below the surface, is one of the strategies that can be deployed to address water quality (treatment) and some water quantity (attenuation).

The City is seeking to implement a pilot project as means to test the efficacy and value of this technology to provide water quality improvements and attenuation of the runoff from developed areas of the City. The La Gorce neighborhood, West 59th Street between Alton Road and Biscayne Bay, was targeted for this pilot project.

The Bioswale can provide the following benefits and limitations:

| BENEFITS | LIMITATIONS |
|---|---|
| Effective removal of suspended solids, nutrients (nitrogen and phosphorus) and other pollutants before it enters the bay. | Bioswales are not intended to solve water quantity issues; thus, flooding would not be completely addressed by a bioswale. |
| Allows stormwater infiltration to replenish the fresh water lens beneath the ground | Periodic maintenance is required to preserve vegetation, grading, and permeability. |

| | |
|---|---|
| Captures the first flush (1.5-inches) of runoff from every rain event to remove contaminants and attenuates the intensity of rainfalls especially for high frequency, low volume rains. | Only the first 1.5 inches of large rain events will be captured – excess water will bypass the bioswale due to limited capacity; however, this adequately treats contaminated runoff per County and State regulations. |
| Beautifies the area with attractive landscape and utilizes a variety of native plants to minimize maintenance requirements. | Potential loss of parking if bioswales are placed in right-of-way areas currently being used by property owners for parking. |

The City Commission referred this item to the Sustainability and Resilience Committee (SRC) and the Finance and Citywide Projects Committee (FCWPC) on June 5, 2019. At the June 26 meeting, the SRC expressed full support for the project inclusive of a pedestrian access leading the Biscayne Bay. At the June 28, 2019 meeting, the FCWPC expressed full support for the project and agreed to fund it from the stormwater bond program and directed City staff to look for ways to lower the cost either by reducing the number of optional types bioswales or other measures without lessening the benefits.

The FCWPC also requested the City to coordinate with the FDOT Alton Road Project and look for potential locations for the FPL transformer to be located in the event that the Upper North Bay Road residents approve the undergrounding of the power lines.

The design engineer is looking into performing value engineering with a potential to reduce the cost of the bioswale as much as $200K from the original cost estimate of $850 to $650K by changing out one of the three types of bioswales to two types of bioswales without sacrificing the treatment and attenuation capacities as originally designed.

The City anticipates some impacts to the proposed bioswales, especially along 59 Street between Alton Road and North Bay Road due to the following future projects: Alton Road Reconstruction Project; the La Gorce Neighborhood Improvement Project; and with FPL for potential undergrounding efforts; however, the soonest these projects are anticipated to be constructed will be in five years and by then the bioswale pilot project would have demonstrated the efficacy and value which is the main intent of this project.

**CONCLUSION**

The Administration recommends approving the Resolution.

**Legislative Tracking**

Public Works

**ATTACHMENTS:**

**Description**

- LTC 431-2019 Overview of Bioswale Method
- Form Approved reso

MIAMI BEACH

OFFICE OF THE CITY MANAGER

NO. LTC# **431-2019** LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: August 2, 2019

SUBJECT: **Overview of Bioswale Method**

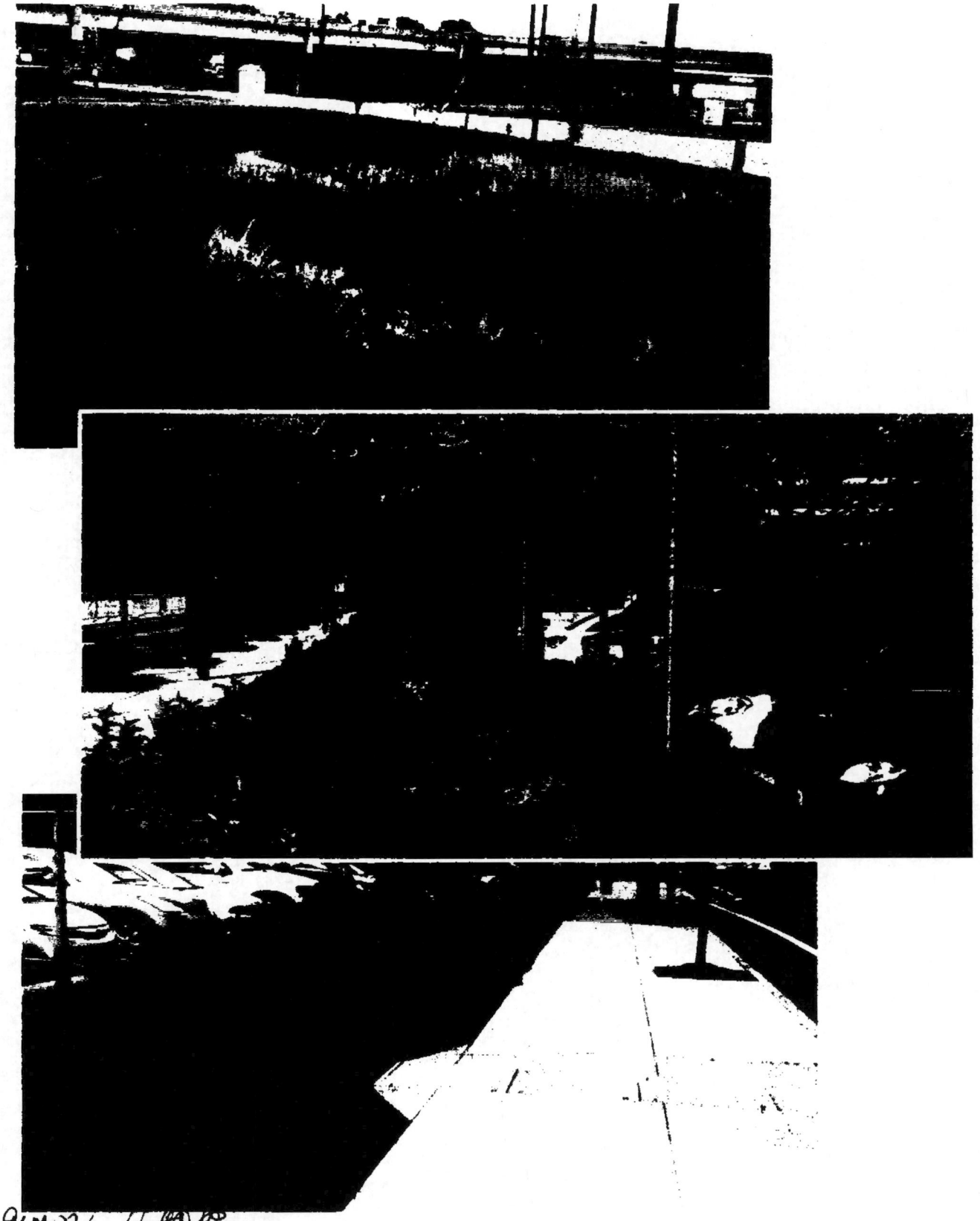
The purpose of this Letter to Commission is to provide an overview of a bioswale design, objectives, benefits, and limitations.

Bioswales can improve stormwater runoff quality by allowing sediments and other deposits to settle out of the water naturally in the bioswale retention area and the engineered soils beneath the surface of the basin. Bioswales help to reduce the velocity of water by slowing down and retaining water, treating the stormwater before it passes into the stormwater system and eventually the waterways and ecosystems.

In the Urban Land Institute's Technical Advisory Panel Report, it is recommended that the city integrate flood management into the larger resilience strategy, to holistically move to a "living with water" approach and to actively use green space to enhance permeability citywide. Jacobs Engineering has been retained to develop an integrated water management approach. Jacobs' first task order is to evaluate blue and green infrastructure and provide guidance on how to best utilize these approaches. Bioswales will be a green infrastructure method evaluated by Jacobs. This task order will be complete by October 2019.

| **BENEFITS** | **LIMITATIONS** |
|---|---|
| Effective removal of suspended solids, nutrients (nitrogen and phosphorus) and other pollutants before it enters the bay. | Bioswales are not intended to solve water quantity issues; thus, flooding would not be completely addressed by a bioswale. |
| Allows stormwater infiltration to replenish the fresh water lens beneath the ground | Periodic maintenance is required to preserve vegetation, grading, and permeability. |
| Can capture the first flush (1.5-inches) of runoff of rain events to remove contaminants. | Only the first 1.5 inches of large rain events will be captured – excess water will bypass the bioswale due to limited capacity; however, this adequately treats contaminated runoff per county and state regulations. |
| Beautifies the area with attractive landscape and utilizes a variety of native plants to minimize maintenance requirements. | Potential loss of parking if bioswales are placed in right-of-way areas currently being used by property owners for parking. |

Several examples of typical bioswale designs in public spaces:



JLM/EC/SMT/ESW/RC/JF/NPJ/LBM