C4 I DUAL REFERRAL TO THE PUBLIC SAFETY AND NEIGHBORHOOD QUALITY OF LIFE COMMITTEE (PSNQLC) AND FINANCE AND ECONOMIC RESILIENCY COMMITTEE (FERC) TO DISCUSS THE FEASIBILITY, COST, AND BENEFITS OF DEPLOYING ROBOTS AND DRONES CAPABLE OF DETECTING AND COLLECTING LITTER IN MIAMI BEACH PARKS, BEACHES, AND PUBLIC SPACES. THE REFERRAL SHOULD INCLUDE A REVIEW OF AVAILABLE TECHNOLOGIES, POTENTIAL PILOT PROGRAMS, REGULATORY CONSIDERATIONS, AND OPERATIONAL IMPACTS.

Applicable Area: Citywide

Office of Mayor Steven Meiner

Mayor Steven Meiner

Addendum added on 9/8/2026

Committee Referrals - C4 I

MIAMI BEACH

COMMISSION MEMORANDUM

TO: Honorable Mayor and Members of the City Commission

FROM: Mayor Steven Meiner

DATE: October 14, 2026

TITLE: DUAL REFERRAL TO THE PUBLIC SAFETY AND NEIGHBORHOOD QUALITY OF LIFE COMMITTEE (PSNQLC) AND FINANCE AND ECONOMIC RESILIENCY COMMITTEE (FERC) TO DISCUSS THE FEASIBILITY, COST, AND BENEFITS OF DEPLOYING ROBOTS AND DRONES CAPABLE OF DETECTING AND COLLECTING LITTER IN MIAMI BEACH PARKS, BEACHES, AND PUBLIC SPACES. THE REFERRAL SHOULD INCLUDE A REVIEW OF AVAILABLE TECHNOLOGIES, POTENTIAL PILOT PROGRAMS, REGULATORY CONSIDERATIONS, AND OPERATIONAL IMPACTS.

RECOMMENDATION

Please place on the October 14, 2026 City Commission agenda a dual referral to the Public Safety and Neighborhood Quality of Life Committee (PSNQLC) and the Finance and Economic Resiliency Committee (FERC) to discuss the feasibility, cost, and benefits of deploying robots and drones capable of detecting and collecting litter in Miami Beach parks, beaches, and public spaces. The discussion should include a review of available technologies, potential pilot programs, regulatory considerations, and operational impacts.

MEMORANDUM

I. OVERVIEW

Technologies for detecting and collecting litter fall into three categories:

- Autonomous ground robots – commercially available and capable of self-operation
- Aerial drones – capable of AI-based detection, but must be human-operated
- Hybrid systems – combine drones (human-operated) with autonomous ground robots

II. COMMERCIALLY AVAILABLE TECHNOLOGIES

1. CleanWalker Robotics (Ground Robot — Autonomous)
   - Fully autonomous ground-based robots that detect and collect litter, self-charge, and run without human operators.
   - Link: https://www.cleanwalkerrobotics.com/

2. SPAN Robotics (Ground Robots + Mapping Drone)

Integrated system:

- A drone that maps litter (but still human-operated), and
- Autonomous rovers that collect it.
- Link: https://spanrobotics.io/

Only the rovers in SPAN's system are autonomous.
The drone is not, due to FAA RESTRICTIONS.

Research may reveal additional commercially available systems. There are also several additional experimental systems currently in research and development that the City could potentially explore using in a pilot program with an institutional partner.

The City Administration should be prepared to discuss any relevant legal restrictions on drone use at committee.

BACKGROUND/HISTORY

ANALYSIS

FISCAL IMPACT STATEMENT

N/A

Does this Ordinance require a Business Impact Estimate?
(FOR ORDINANCES ONLY)

If applicable, the Business Impact Estimate (BIE) was published on:
See BIE at: https://www.miamibeachfl.gov/city-hall/city-clerk/meeting-notices/

Does this Agenda Item support the Strategic Plan?: No

If so, specify what Objective(s):

FINANCIAL INFORMATION

CONCLUSION

Applicable Area

Citywide

Is this a "Residents Right to Know" item, pursuant to City Code Section 2-17?	**Is this item related to a G.O. Bond Project?**
No	No

Was this Agenda Item initially requested by a lobbyist which, as defined in Code Sec. 2-481, includes a principal engaged in lobbying? No

If so, specify the name of lobbyist(s) and principal(s):

Department

Office of Mayor Steven Meiner

Sponsor(s)

Mayor Steven Meiner

Co-sponsor(s)

Condensed Title

Ref: PSNQLC/FERC - Evaluation of Robots/Drones for Litter Detection & Collection. (Meiner)

Previous Action (For City Clerk Use Only)