

MIAMI BEACH

COMMITTEE MEMORANDUM

TO: Finance and Economic Resiliency Committee Members
FROM: Eric Carpenter, City Manager
DATE: June 11, 2025
TITLE: DISCUSS THE FEASIBILITY OF IMPLEMENTING A GREEN ROOF AT CITY HALL.

RECOMMENDATION

The Administration recommends that the FERC review and discuss the enclosed information and preliminary Opinion of Probable Cost (OPC). The Administration further recommends that while the FERC evaluates feasibility of implementing a green roof at City Hall, it also carefully considers several critical factors that will significantly impact the General Fund budget, beginning in FY 2026:

- The City's increasing unfunded capital improvement program
- Long-term General Fund financial projections indicating a potential shortfall in upcoming fiscal years
- The passage of Amendment 5 in November 2024, which increases the homestead exemption and further constrains the growth of taxable property values

These considerations are essential to ensure that decisions regarding a green roof project aligns with the City's broader long-term financial stability and strategic priorities. If the Committee recommends funding the green roof at City Hall, the Administration recommends it be considered as part of the FY 2026 budget process.

BACKGROUND/HISTORY

On March 19, 2025, the Mayor and City Commission (the City Commission) adopted a referral sponsored by then Vice Mayor Tanya Bhatt (item C4J) to the Finance and Economic Resiliency Committee (FERC) to discuss the feasibility of implementing a green roof at City Hall.

Green roofs help to cool the buildings below them by storing heat and helping to reduce temperature fluctuations. They also act as insulators and decrease the flow of heat through roof structures which can help improve indoor comfort for building occupants.

In addition to helping to cool the buildings below them, green roofs can help reduce the urban heat island effect. The urban heat island effect is known to increase the temperatures in developed areas and therefore worsen the impacts of extreme heat.

The urban heat island effect is caused by materials commonly used in urban development which absorb significant amounts of energy from the sun and increase the ambient temperature of their surroundings. Materials that utilize darker colors are a major culprit of heat island effect, as they absorb more of the sun's energy than lighter colors. Materials which consist of very light colors, otherwise known as "High Albedo Surfaces", tend to reflect a greater amount of the sun's energy

into the atmosphere, and therefore reduce the potential for the urban heat island effect.

An additional benefit of green roofs is that their vegetation helps to reduce air pollution and emissions. Researchers estimate that a 1,000-square foot green roof can remove about 40 pounds of particulate matter (PM) from the air in a year¹. The vegetation of green roofs also helps to provide stormwater management benefits. A North Carolina study of actual green roof performance found that test green roofs reduced runoff from peak rainfall events by more than 75 percent².

A prime example of a successful green roof project exists at the New World Symphony located at 500 17th Street and designed by Gehry Partners, LLP.

ANALYSIS

On March 13, 2019, the City Commission adopted the Urban Heat Island Ordinance (Ordinance No. 2019-4252), requiring that all new construction install a sustainable roof. Approved roof types under the Ordinance include metal roofs, solar roofs, blue roofs, white roofs, cool roofs, green roofs, or any other roofing system recognized by a green building certification agency that helps to reduce heat island effect, allows for the reuse or retention of storm water or reduces greenhouse gases.

Given the structural considerations necessary on account of weight (or dead load) of the plantings, soil, and water, as well as the complex drainage infrastructure needed for proper irrigation, green roof projects are most successful when contemplated during the early design phase of a building. However, green roof retrofit projects at existing buildings are also possible.

The existing roof area at City Hall is 32,500 feet and consists of a modified bitumen roofing system whose topcoat was last replaced in 2018.

Based on preliminary cost estimate data gathered for the potential installation of a green roof at the City's Facilities Management building located at 1833 Bay Road, it is estimated that installing a roof over three quarters of the existing roof area at City Hall would cost approximately \$1.7M - inclusive of a comprehensive monthly maintenance plan - if the City were to implement a similar modular pre-vegetated roof tray system.

Installation of a similar green roof system covering half of the existing roof area at City Hall would represent an estimated cost of \$1.1M, also inclusive of a comprehensive monthly maintenance plan.

The scope of repair work necessary for the existing roofing membrane and details for auxiliary items are still unknown at this time.

FISCAL IMPACT STATEMENT

¹ Peck, S. & Kuhn, M. (2003) Design Guidelines for Green Roofs.

² Moran, A., Hunt, B., et al. (2004) A North Carolina Field Study to Evaluate Greenroof Runoff.

The precise fiscal impact of implementing a proposed green roof at City Hall is not yet known. However, based on available data, the Total Project Cost may be in the range of \$1.1M to \$1.7M.

Does this Ordinance require a Business Impact Estimate?

(FOR ORDINANCES ONLY)

The Business Impact Estimate (BIE) was published on .

See BIE at: <https://www.miamibeachfl.gov/city-hall/city-clerk/meeting-notice/>

FINANCIAL INFORMATION

CONCLUSION

The foregoing information and preliminary opinion of probable cost (OPC) has been provided for review and consideration by the Finance and Economic Resiliency Committee.

Applicable Area

South Beach

Is this a "Residents Right to Know" item, pursuant to City Code Section 2-17?

Yes

Is this item related to a G.O. Bond Project?

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

Facilities and Fleet Management

Sponsor(s)

Commissioner Tanya K. Bhatt

Co-sponsor(s)

Condensed Title

Discuss potential green roof at City Hall.

