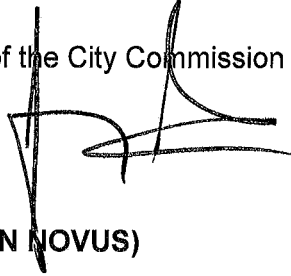


# MIAMI BEACH

City of Miami Beach, 1700 Convention Center Drive, Miami Beach, Florida 33139, [www.miamibeachfl.gov](http://www.miamibeachfl.gov)

## COMMISSION MEMORANDUM

TO: Mayor Dan Gelber and Members of the City Commission  
FROM: Jimmy L. Morales, City Manager  
DATE: February 13, 2019  
SUBJECT: **Urban Heat Island (FULL TITLE IN NOVUS)**



### **ADMINISTRATION RECOMMENDATION**

The Administration recommends that the City Commission approve the subject Ordinance at First Reading and set a Second Reading Public Hearing for March 13, 2019.

### **HISTORY/ BACKGROUND**

On July 26, 2017, at the request of Commissioner John Elizabeth Aleman, the City Commission referred the subject discussion to the Land Use and Development Committee (LUDC) and Planning Board for consideration and recommendation (Item C4 A). On October 11, 2017, the Land Use and Development Committee continued the item to a date certain of December 11, 2017.

On December 11, 2017, the Land Use Committee discussed the item, including a narrative of potential options. The LUDC directed staff to draft an ordinance with both incentive and requirement options and continued the item to the February 21, 2018 meeting. On February 21, 2018, the item was deferred to March 14, 2018.

On March 14, 2018 the item was deferred to the April 4, 2018 LUDC meeting. On April 4, 2018, staff presented a table of strategies that could be included within the land use regulations and the LUDC directed staff to draft an ordinance including solar carports, cool pavements and sustainable roofing systems and explore potential pilots for white streets. The LUDC continued the item to the May 23, 2018 meeting.

On May 23, 2018 the item was continued to June 13, 2018 due to the length of the agenda. On June 23, 2018, the LUDC recommended that the City Commission refer the item to the Planning Board.

### **PLANNING ANALYSIS**

The City of Miami Beach has adopted many ordinances to address sea level rise and flooding, which are a major effect of climate change. However, another major effect of climate change that should be addressed is extreme heat. Extreme heat can have major impacts on public health, including worsening the potential for heat strokes and dehydration, and possibly an increase in the potential for the spread of tropical infectious diseases.

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 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, as they absorb more of the sun's energy than lighter colors. Materials which consist of very light colors, otherwise known as a "High Albedo Surface", 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.

According to a study from the Environmental Protection Agency (EPA), the temperature in urban areas is 1.8 to 5.4 degrees Fahrenheit higher than in surrounding areas. This also leads to an increase in energy and air-conditioning demands, which leads to greater pollution and greenhouse gas emissions, which contributes to climate change. Utilizing "High Albedo Surfaces" or very light colored materials for driveways, parking lots, rooftop parking, and roofs are an easy way to reduce the potential for urban heat islands.

The attached ordinance proposes strategies to minimize the potential for the urban heat island effect. These strategies include allowing solar carports, requiring cool pavements and penalties for not providing sustainable roofing systems on new construction. The ordinance proposes the following:

- Public hearing fees for the installation of a "sustainable roofing system," "solar carport," "porous pavement," or "cool pavement" are waived.
- Surface and rooftop parking shall have a "High Albedo Surface" (defined with a solar reflectance value of 0.65 or greater on the Solar Reflectance Index (SRI) via the Cool Roof Rating Council Standard (CRRRC-1). High albedo surfaces have high reflectance and can reduce the surface temperature.
- Revises the definition of a "sustainable roofing system" to include a metal roof. The definition previously included solar roof, blue roof, white roof, cool roof, green roof, or any other roofing system recognized by a green building certification agency that reduces heat island effect, allows for the reuse or retention of stormwater or reduces greenhouse gases. The simplest sustainable roofing system would be a "high albedo" or light-colored roof.
- For new construction projects will be encouraged to provide a "sustainable roofing system." For projects that cannot implement a sustainable roofing system, a "sustainable roof fee" shall be paid in the amount of \$3.00 per square foot of the floor area immediately below the roof. The sustainable roof fee collected shall be deposited in the "Sustainability and Resiliency Fund," established pursuant to section 133-8 of the City Code. Revenue in the Sustainability and Resiliency Fund shall be utilized to provide improvements that increase the environmental sustainability and resiliency of the City. This includes environmental restoration projects, environmental remediation projects, environmental monitoring, green infrastructure, enhanced storm water quality and quantity improvements, and sustainability planning efforts.
- Allows for solar panels to be an allowable height exception in single family districts. It also provides for a greater height for a rooftop curb in order to facilitate screening of the panels. The land development regulations currently allow for solar panels as an allowable height exception in all other districts.

- Surface parking and driveway areas shall utilize a “High Albedo Surface” or porous pavement. Porous pavement can assist with the reduction of stormwater runoff and the need for other stormwater infrastructure, as well as the reduction of the surface temperature.
- The proposed ordinance allows for solar carports as an allowable front yard encroachment. Currently carports are only permitted to be made of canvas and pipe. Solar carports will support the city’s goal to move towards renewable sources of energy, while reducing greenhouse gas emissions, keeping the vehicle and the surface cooler and preserving the usefulness of the ground.
- Incorporates sea level rise and resiliency review criteria to minimize the potential for heat island effect. The new review criteria directs an applicant to ensure that the potential for the heat island effect is minimized.
- The previously existing criteria and other code sections were also refined to facilitate review and enforcement.

As part of efforts to reduce dependency on fossil fuels, the Sustainability and Resiliency Committee has directed the City to work towards achieving a gold designation from SolSmart, which is a national agency that certifies local governments as having regulations that facilitate the installation of solar panels. This is intended to encourage solar installers to work within the City by removing existing barriers. Currently the City has a bronze designation. One of the remaining elements to achieve a gold designation is to explicitly state that solar panels are an allowable accessory use in all zoning districts. The proposed ordinance includes this language.

### **PLANNING BOARD REVIEW**

On January 22, 2019, the Planning Board held a public hearing and transmitted the Ordinance to the City Commission with a favorable recommendation by a vote of six to zero (6-0) with the modification to include solar panels as an allowable accessory use in all zoning districts.

### **SUMMARY**

Due to requirements for zoning in progress, several sections of the ordinance must be enforced on projects that have not received land use board approval or that have not obtained a full building permit. While compliance is possible for most projects, some necessary modifications to permits in progress might be difficult so late in the process. Therefore, the Administration is recommending an Applicability Clause so that the ordinance does not apply to projects that have received a building permit process number prior to the enactment of the proposed ordinance. Specifically, it is recommended that Section 142-1132(g)(4) be modified as follows to ensure consistency between the applicability clause and the section:

(4) For lots with a home built after the adoption of this ordinance, driveways and parking areas that are open to the sky within any required yard shall be composed of porous pavement or shall have a High Albedo Surface, as defined in section 114-1 of the City Code.

Upon further review, the Administration is also recommending that additional minor

clarifications be made to Sections 142-1132(g) and 130-69 to ensure that the "high albedo surface" should consist of a durable material or sealant to ensure that it easy to maintain in good condition. These aforementioned modifications have been included in the Ordinance.

### **CONCLUSION**

The Administration recommends that the City Commission approve subject Ordinance at First Reading and set a Second Reading Public Hearing for March 13, 2019. Additionally, it is recommended that the following additional modifications, as summarized above, also be approved at First Reading, and included in the Ordinance at Second Reading:

1. Incorporate an applicability section so that the ordinance does not apply to projects that have a received a building permit process number prior to the enactment of the ordinance.
2. Amend section 142-1132(g)(4) as follows:

For lots with a home built after the adoption of this ordinance, dDriveways and parking areas that are open to the sky within any required yard shall be composed of porous pavement or shall have a High Albedo Surface consisting of a durable material or sealant, as defined in section 114-1 of the City Code.

3. Amend Section 130-69 as follows:

(3) Open air parking lots, open to the sky, shall have a "High Albedo Surface" consisting of a durable material or sealant in order to minimize the urban heat island effect or utilize "porous pavement." This requirement shall include all parking areas, and all drive lanes and ramps.

JLM/SMT/TRM/RAM

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