



MIAMIBEACH

COMMITTEE MEMORANDUM

TO: Land Use and Development Committee

FROM: Kathie G. Brooks, Interim City Manager *KGB for JMG*

DATE: November 5, 2012

SUBJECT: **DISCUSSION REGARDING ENVIRONMENTAL IMPACTS OF ARTIFICIAL TURF**

On July 18, 2012 the City Commission referred this item to the Land Use and Development Committee to discuss the environmental impacts of artificial turf and its performance in extreme weather events.

BACKGROUND

September 14, 2011: At the request of Commissioner Wolfson a discussion regarding an amendment to the Land Development Regulations of the City Code to address the issue of artificial grass in certain areas of private property was referred by the City Commission to the Land Use and Development Committee (LUDC).

September 21, 2011: The LUDC continued this item to the October 26, 2011 meeting.

October 26, 2011: By a vote of 2-0, the LUDC requested that the Planning Board review both versions of the proposed ordinance permitting artificial grass in the Dune Overlay District (one permitting unlimited use, and one setting a maximum of 50% of the required landscape area and requiring setbacks from side property lines) and then bring back to LUDC.

July 18, 2012: The City Commission adopted the Ordinance and referred the issue to the LUDC, to address Mayor Bower's concern regarding environmental impact, especially during times of disaster.

ANALYSIS

Artificial turf can be a sustainable alternative to natural grass for high use public areas and athletic fields that are subject to intense activity and high maintenance costs. Artificial turf is an easy-to-maintain alternative that does not require the use of fertilizers and pesticides that can contribute to water pollution. In addition, artificial turf does not require mowing or watering. This reduces green house gas emissions associated with mowing and conserves water, while also greatly reducing the cost of maintaining athletic fields.

However, there are several environmental and health considerations to consider when utilizing artificial turf in public areas. The main environmental concerns include the following:

- Increased surface temperatures;
- Water and air quality concerns associated with recycled tires and synthetic materials; and,
- Reduced infiltration and filtration of storm water during rain events.

Similar to asphalt, artificial turf absorbs the sunlight and heat which increases the temperature of the surface and contributes to solar heating. Synthetic grass surface temperatures can climb as high as 30 to 50 degrees Fahrenheit above natural grass temperatures. The increased temperatures raise the ambient temperature to users about 5 to 10 degrees Fahrenheit. The

increased surface temperature has the potential to create discomfort, cause thermal injury, and contribute to heat-related illnesses. Awareness of these issues should be raised among users and managers. The increased surface temperatures also lead to solar heating which increases the heat island effect of the community and contributes to overall global warming. Thus, installation should be limited to locations such as highly used athletic fields and where possible, it is recommended that the installation be mitigated by adding additional shade trees in the surrounding area to reduce the heat island effect.

The second environmental concern with artificial turf is the impact on air and water quality due to the use of recycled tire material. Recycled tire material is used to reduce impact injuries and create a sense of a natural field surface. While using recycled tire material helps keep tires out of the landfill, there is a concern about the human health and environmental risks associated with exposure to this material. In 2009, the U.S. Environmental Protection Agency published “A Scoping-Level Field Monitoring Study of Synthetic Turf Fields and Playgrounds”, which evaluated the potential health and environmental risks of the material content including the off-gassing and leaching of heavy metals and other toxins. While the study concluded that concentrations of components monitored were below levels of concern, it noted that due to the limited nature of the study, more comprehensive conclusions will require additional data.

The third environmental consideration of artificial fields is reduced infiltration and filtration of storm water during both normal and intense rain/storm events. Artificial field designs include storm water management systems which are incorporated into the surface’s base, some of which claim to provide improved drainage. When artificial turf is used, adequate drainage must be designed to ensure that the installation of artificial grass does not contribute to additional runoff and/or erosion of surrounding property and infrastructure. In addition, periodic inspections must be conducted to ensure the drainage system is operating as designed and will drain properly during rain events.

Overall, artificial turf provides a sustainable alternative to natural grass in areas of intense activity such as athletic fields and small high-intensity-use areas such as Euclid Circle. The application of artificial turf should be restricted to selected areas such as these. Use of artificial turf contributes to the City’s overall heat island effect. To help mitigate this impact, additional shade trees should be incorporated in the project’s design in order to reduce solar heating. In addition, drainage should be evaluated prior to the installation of artificial turf in both public and private uses to ensure adequate storm water control. The City should monitor locations where artificial turf has been installed to ensure that it continues to function as designed.

CONCLUSION

The above information is provided for discussion by members of the Land Use and Development Committee.

Attachment: General Guidelines for Artificial Turf Use


JGG/FHB/JJF/RWS/ESW

Administrative Level Approval of the Use of Artificial Grass

1. **Private or Public Football Fields or Soccer Fields** where game action is very frequent and very intense and natural grass cannot recover adequately in between games uses, as determined by the Parks and Recreation Department or the respective institution. Planning staff may approve the installation of high grade artificial grass for use in these areas, limited to the 'game' area of the playing field.
2. **Private or Public Covered Children's Playgrounds** where canopy shade structures above the playground equipment prevent the growth and use of natural grass. Planning staff may approve the installation of high grade artificial grass for use in these covered playground areas, limited to the area covered by the canopy.
3. **High-Intensity-Use Small Public Outdoor Areas** where natural grass cannot survive the intensity of use without the area being closed for extended periods of time for the natural grass to recover or be replaced, and/or where natural grass may be victim of frequent dog use and cannot be kept sanitary for use by small children. An example is the Euclid Oval on Lincoln Road where very small children frequently crawl and run bare foot. Planning staff may approve the installation of high grade artificial grass for use in these high-intensity-use small public areas at the request of the Parks and Recreation Department.

Board Level Approval of the Use of Artificial Grass

1. **Hotel Property / Private Club / or Multi-family Residential Pool Deck Areas** where lounge chairs cover the natural grass most of the time as well as produce beaten down 'foot paths' where bathers come from and go to the pool, and where the use of artificial grass would not have a significant adverse aesthetic impact. Natural grass cannot normally survive this level of constant shade or intensity of foot traffic without being frequently replaced; such applications may be submitted to and approved by the Historic Preservation Board or the Design Review Board *provided they do not fall within the Dune Preservation Overlay District.*
2. **Hotel Property / Private Club High-Intensity-Use Outdoor Areas** where multiple high intensity events are held on a daily or weekly basis involving large concentrations of people on the natural grass as well as the moving of vehicles and equipment over the grass in preparation for such events, and where the use of artificial grass does not have a significant adverse aesthetic impact. These areas of natural grass often cannot be reasonably maintained in healthy condition and good appearance without frequent replacement. Such applications may be submitted to and approved by the Historic Preservation Board or the Design Review Board *provided they do not fall within the Dune Preservation Overlay District.*

Jose Smith, City Attorney, stated that towing from private property is controlled by Florida Statutes.

Commissioner Tobin requested that the language include "consistent with Florida Statute."

Jose Smith, City Attorney, stated that that is already being done.

R5H Artificial Grass - (Without Restrictions):

1. An Ordinance Amending The Land Development Regulations Of The Code Of The City Of Miami Beach, By Amending Chapter 142, "Zoning Districts And Regulations," Article III, "Overlay Districts," Division 2, "Dune Preservation Overlay," By Amending Section 142-774, "Uses And Structures Permitted," To Allow Synthetic Grass; Providing For Repealer, Codification, Severability And An Effective Date. **First Reading**

ACTION: Ordinance rejected.

2:45:16 p.m.

* R5H Artificial Grass – (With Restrictions)

2. An Ordinance Amending The Land Development Regulations Of The Code Of The City Of Miami Beach, By Amending Chapter 142, "Zoning Districts And Regulations," Article III, "Overlay Districts," Division 2, "Dune Preservation Overlay," By Amending Section 142-774, "Uses And Structures Permitted," To Establish Policies Regarding The Installation Of Synthetic Grass; Providing For Repealer, Codification, Severability And An Effective Date. **First Reading**
(Requested By Commissioner Jonah Wolfson)
(Legislative Tracking: Planning Department)

ACTION: Ordinance approved on first reading. Item referred to Land Use and Development Committee. Motion made by Commissioner Góngora to approve the ordinance; seconded by Commissioner Wolfson; Ballot vote: 7-0. Second Reading and Public Hearing scheduled for September 12, 2012. R. Granado to notice. Richard Lorber to place on the committee agenda. Lilia Cardillo to place on the Commission Agenda. **Fred Beckmann to handle.**

REFERRAL:

Refer to the Land Use and Development Committee to address Mayor Bower's concern regarding impact on the environment and during times of natural disasters.

End

Jorge Gomez, Assistant City Manager, explained the item and added that the Planning Department recommended approving the ordinance with the restrictions.

Discussion held.

Kevin Smith, Parks and Recreation Department Director, stated that there are no artificial turf fields in the City's parks system; it has been approved for installation in the football field, and there is a request for capital for artificial turf for the baseball and soccer fields, but that has not been voted on, which will be discussed at the Sustainability Committee.

Alex Heckler, on behalf of the Fontainebleau Hotel, stated that it is not feasible to replace the grass in the parcel of property east of the coastal construction where lounge chairs are placed,