


Planning & Zoning Board Meeting  
August 30, 2022

City of Belle Isle:  
Staff Report on  
Artificial Turf



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### Overview

- Planning & Zoning requested the Belle Isle City Council place a six-month moratorium on artificial turf until a decision could be made regarding whether artificial turf should be allowed and included in the Land Development Code.
- As of now, city code does not outline requirements for residential landscaping standards.
- The intent of the City's landscape code is to enhance the city's appearance, provide habitats for urban wildlife, improve air and water quality, mitigate heat and glare, and increase land values by providing landscaping as a capital asset. Some of these objectives can be met with artificial turf.

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### Natural Turf vs. Artificial Turf

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NATURAL TURF	
ADVANTAGES	DISADVANTAGES
Less expensive to install.	More expensive and laborious to maintain.
If maintained, never has to be replaced.	Must be mowed, trimmed, and watered regularly. Maintenance affected by droughts, flooding, and other irregular weather conditions.
Filters water – lowers run-off amount and recharges water tables.	Some fertilizers, pesticides, and herbicides can leach into run-off.
Can easily be repaired with patching and seeding/Easily interspersed and integrated with a range of planting materials.	Can become discolored due to disease and pet waste. Can become muddy without proper drainage.
Generally good for the environment – Cools the air on hot days; takes carbon out of the air and replenishes oxygen; provides habitat for insects (food for birds); microbial life enriches the soil, dead turf is compostable.	Mowers/trimmers can be noisy and throw pollen into the air which irritates many that suffer from seasonal allergies.

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ARTIFICIAL TURF	
ADVANTAGES	DISADVANTAGES
Less expensive and laborious to maintain.	More expensive to install.
Can withstand significantly more use (used in sports stadiums) and general wear and tear. Good for places with little natural light, or desert climates.	Must be replaced every 8-20 years depending upon quality and usage and typically is land-filled at the end of its useful life.
Conserves water.	When artificial turf is installed the subgrade soil must be compacted, which affects water filtration and drainage. The impervious surface created by the compaction will increase runoff. Compacted soil underneath creates more run-off and "water pillows" can form without proper drainage.
No mowing.	Can absorb sunlight and create "heat islands" that can be much hotter than natural turf – which can be temporarily reduced by the application of water prior to use.
No pesticides or herbicides for pest or disease management required.	Needs occasional cleaning and/or antimicrobial treatments because pathogens are not broken down by natural processes in the same manner as in natural turf – some may also leech silver ions that are toxic to aquatic environments.
Recycled materials are often used as infill.	Reduces habitat for insects (food for birds) and microbial life that enriches the soil.
No noise or emissions from mowers or trimmers, less allergens/pollen in the air to upset seasonal allergies.	Production of the synthetic materials that makes up artificial turf generates greenhouse gas emissions.
No discoloration due to pet waste.	Granulated rubber infill can carry heavy metals that could leach into the water table.
No dirt/mud to track indoors.	Loss of organic matter can affect soil health by depleting healthy soil bacteria and organisms. Loss of soil dynamics can prevent soil from filtering and cleaning ground water.
No seasonal visual variation.	Seam breaks can result over time, which are hard to repair/patch without visual impact.
	Infill can be tracked indoors.
	Not easily interspersed or integrated with a range of other landscape materials such as live flowers, shrubbery, and trees.

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## Evolution of Artificial Turf

- The synthetic product has improved over the years.
- Specialty companies selling artificial turf have advertised that the level of heat absorption (impacting surface temperature) has decreased, the product's durability has increased, and their products are mindful of children, pets, and environmental safety and wellness.
- Example of percolation:  
Permeability of 30 inches per hour per square yard

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**Staff Recommendation for Permitting Process**

- Staff is proposing to establish regulatory guidelines to set limitations on its usage to fit within the context of a sub-tropical environment, address installation standards, and assess the permitting process for the inorganic product.

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**Key Factors for Permitting**

Upon reviewing Artificial Turf ordinances from other Florida cities and towns, the following topics are key factors to consider:

- Defining turf as pervious or impervious;
- Outlining the design and material standards for landscaping;
- Citing standards for installing the product;
- Maintenance requirements;
- Determining the permitting process for artificial turf

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**Pervious or Impervious?**

- Difference between living and non-living material?
- Is drainage required or optional with installation?

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**Design & Material Standards**

Basic Considerations:

- Must be the color green
- Must be safe for children and pets
- Cannot be carpet material

Specific Considerations:

- Height and weight of turf
- Type of turf fiber and infill
- Type of backing

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**Installation Requirements**

- Designated areas for artificial turf
- Material securely anchored at all edges and seams tightened
- Installation completed by a licensed professional, or must be installed according to the manufacturer's specifications
- Separate artificial turf from bodies of water and natural features

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**Preferences and Restrictions on Placement Arrangement**

- Mitigation required from existing irrigation system?
- Allowed within dripline of trees?
- Prohibition from City right-of-way?
- Limited to certain zoning districts or for certain yard areas?

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### Upkeep Considerations

- Must be free of weeds, debris, odors, impressions, and flat or matted areas
- Cannot have holes, tears, discoloration, seam separations, or excessive wear
- Repair and replace as needed
- If unmaintained, City may have authority to remove the product

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### Permitting Process

- Recognized as pervious or impervious?
- Does it require a building permit?
- Inspection during the installation or after?
- Should an agreement be established and recorded with the property/property owners?
- Documentation may require:
  - Application form (with ISR calculations)
  - Property Survey
  - Contractor Registration
  - Landscape plan with placement and dimensions
  - Manufacturer and product specifications with warranty information
  - Drainage Plan

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SWOT Analysis of Artificial Turf in The City of Belle Isle			
Strengths	Weaknesses	Opportunities	Threats
<ul style="list-style-type: none"> <li>• Caters to residential demand for the growing landscaping trend of artificial turf</li> <li>• Regulates and records use of artificial turf in the City, which ensures residents follow manufacturer imposed requirements and safety considerations to properly install the product</li> <li>• Could be an extra form of funding for the Planning Department and the City</li> <li>• Artificial turf may limit water consumption and lawn mowing services for private and public land (impacting use of government resources)</li> <li>• Code Enforcement Department oversees quality and maintenance of turf</li> </ul>	<ul style="list-style-type: none"> <li>• City needs to create new permit application and permit procedure for artificial turf</li> <li>• City needs to develop standard specifications and code language for allowing artificial turf</li> <li>• Outsourcing Expertise: permitting process may require more than just a "Planning Review" to assess the material and installation of the product</li> <li>• Involving Universal Engineering Sciences will incur the homeowner money and time to review the permit application</li> <li>• How can code enforcement review the product to ensure it's well-maintained, especially if it is installed in the backyard of residential lots?</li> </ul>	<ul style="list-style-type: none"> <li>• Turf upholds "natural" landscape appeal and aesthetics</li> <li>• Explores alternative landscaping options for residents</li> <li>• Could be less labor intensive to maintain</li> <li>• City can track and monitor effects of turf on the environment</li> <li>• A recorded agreement may need to be established</li> <li>• May require residents to install onsite drainage to prevent future flooding</li> <li>• May create jobs as residents hire artificial turf/landscaping companies for turf installment</li> </ul>	<ul style="list-style-type: none"> <li>• Negative Environmental Impacts to the City                             <ul style="list-style-type: none"> <li>• Artificial Turf may create a heat island effect, alter the micro-climate of individual lots, and increase CO2 levels by replacing organic material with inorganic material</li> </ul> </li> <li>• May encourage more residents to use artificial turf, which takes away from the natural landscape of the overall City</li> <li>• May negatively affect local lawn mowing businesses</li> <li>• Does the City want to encourage natural landscaping or aesthetically-pleasing landscaping?</li> <li>• For the long term, is this an "enhancement" to the residential lots or detrimental to the overall quality of life for the citizens?</li> </ul>

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### Alternative Landscaping Options for Residents

- Florida statute 373.185 references educational resources for local governments to utilize as they devise environmentally conscientious landscaping ordinances.
- Florida statute 373.185 outlines Florida Friendly Landscaping as quality landscape techniques that conserve water, protect the environment, are adaptable to local conditions, and are drought tolerant.

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### Alternative Landscaping Options for Residents (cont.)

- Belle Isle residents off Colleen Drive are advocates of using Florida native plants as a landscaping option for their front yard.
- Instagram page @BelleIsleNativePlants shares an array of photos featuring their wildlife garden.

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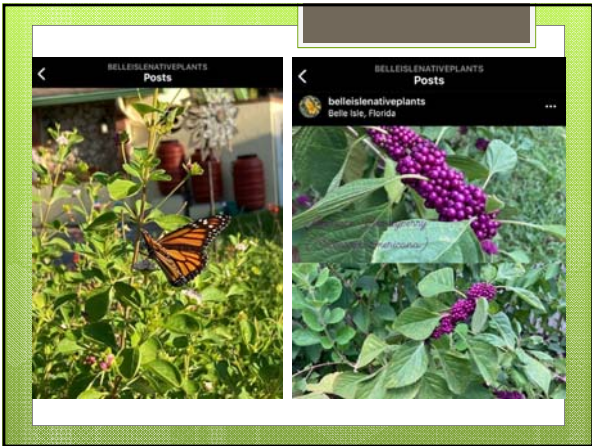
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### Staff Recommendations

- If the P&Z Board approves to allow for artificial turf, Staff recommends outlining standard specifications, and Code language.
- If the P&Z Board does not allow for artificial turf, Staff recommends the Code expressly prohibit the product on residential lots. Those that have artificial turf must maintain it well. However, replacing and expanding existing use could be prohibited.

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