Artificial Turf

6/13/2023

Background

Current Greeley regulations regarding artificial turf (Section 24-802):

- **Up to 50% of any landscape area may consist of inorganic (non-living) decorative material** such as river rock, colored pea gravel, boulders, pavers, or similar natural material, provided it is designed and arranged in a way that can infiltrate runoff through associated planting areas.
- Artificial turf is only acceptable as ground cover for areas not visible from public rights of way and streets and **may be subject to other engineering specifications such as grading or drainage plans**.
- Native grass or native grass seed shall be planted in detention and retention ponds and areas not highly trafficked by pedestrian activity.

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Findings

1. Peer City Regulations
2. Turf considerations and quality
3. Economics
4. Water Demands
5. Environmental Considerations
6. Staff Recommendation

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Peer City Research

- Fort Collins
- Loveland
- Windsor
- Thornton
- Longmont
- Aurora
- Northglenn

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Peer City Research

Jurisdiction	Allowed in Front Yards	Reference	Notes
Fort Collins	No code info/silent		
Loveland	No code info/silent		
Longmont	No code info/silent		
Windsor	No code info/silent		Required amount of living material in front yard
Aurora	Yes	Section 4.7.3.B.11	50% of the front yard must be living material
Northglenn	No code info/silent		
Erie	No	Section 10.6.4.F	
Thornton	No	Section 18-542	Not allowed in front yards or yards visible from ROW

Research Takeaways

1

Most cities have not **yet** addressed artificial turf

2

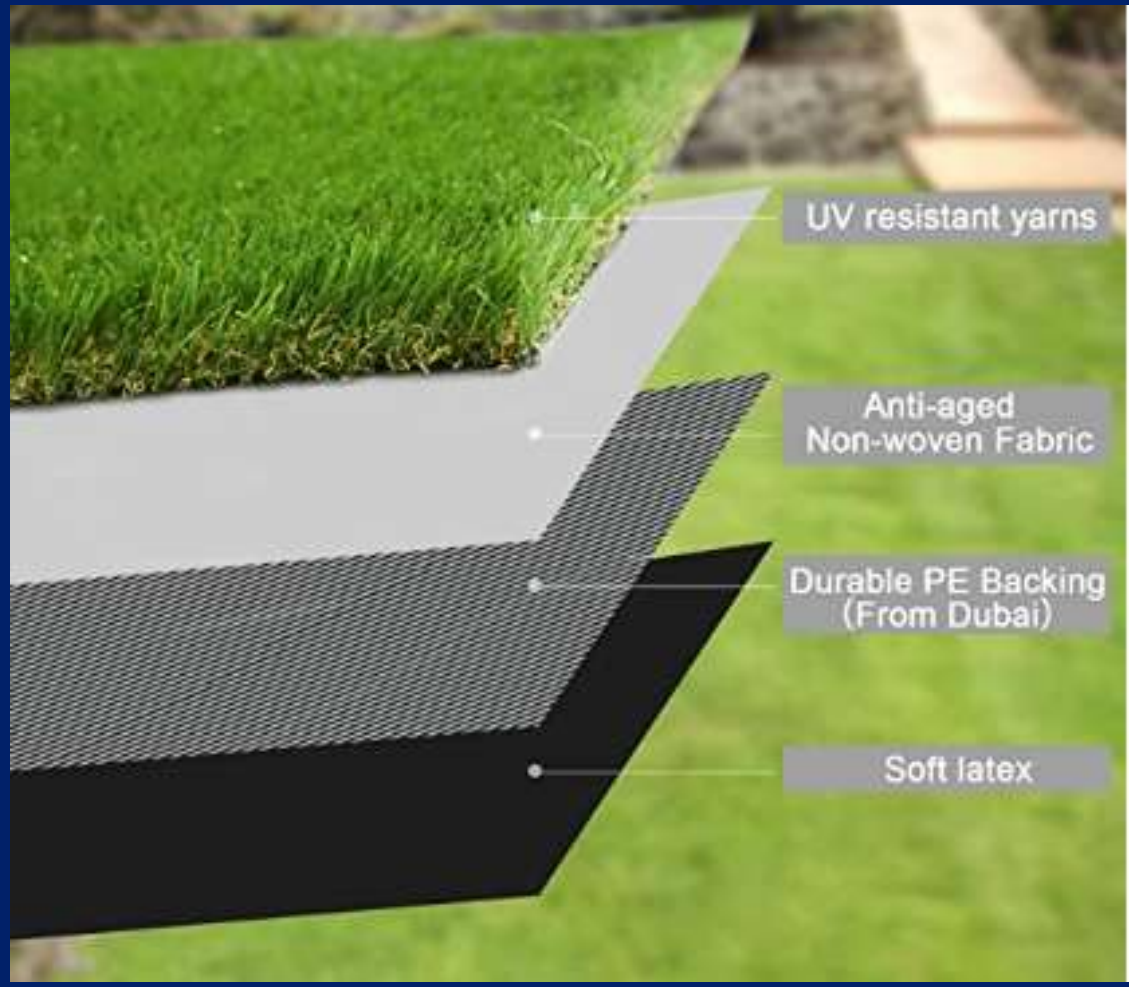
The Greeley community has determined that artificial turf is **not appropriate in front yards**

3

Existing regulations **require minimum living material, 50% or greater**

Artificial Turf Considerations

- May reduce landscape water demands
- Various degrees of costs
- DIY to professional installation
- May have significant environmental drawbacks



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Benefits of Synthetic Lawns

1

Uniform Appearance

2

Lower Water Consumption

3

Reduced Maintenance

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Variable Quality and Life Expectancy

1

Inappropriate installation

2

Improper installation

3

Phased installation/replacement

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Life Cycle Concerns

1

Unmitigated Wear

2

Site Drainage Issues

3

Poor Aesthetics

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Economics

	Install costs/sq. ft	Lifespan	1,000 sq.ft/install	Water cost
Artificial Turf	$6.00-$15.00+	5-10 years	>$6,000	$0-?
Water-wise	$0.80-$5.00	20+ years	>$800	$49
Traditional Turf	$1.35-$2.40	20+ years	>$1,350	$108

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Water Demands

- Flush pet waste
- Pet odor issues
- Cooling needed due to heat effects
- Disinfect artificial turf

	Water needs/1,000 sq.ft/year
Traditional Turf	20,000 gallons
Water-wise Turf	8,000 gallons
Artificial Turf	?? gallons

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Environmental

- Harmful chemical releases- (Western Water Advocates 2022 Report)
- Potential stormwater impacts
- Increased waste stream impacts
- Increase energy and greenhouse gas emissions

	Pounds of CO2 Emissions	Cars on the road/year	Miles driving a gas car	Trees needed to plant to off-set
Artificial Turf	1,161,824	117	1,350,990	8,714
Traditional Turf	257	0.026	299	1.9

Sources

1. *Magnusson, S. and Macisk, J., Analysis of energy use and emissions of greenhouse gases, metals and organic substances from construction materials and used for artificial turf, Resources, Conservation and Recycling, v 122 (July 2017).*
2. *Milesi, C. et al., A strategy for mapping and modeling the ecological effects of US lawns, Environmental Management, c 36 (2005).*
3. *U.S. Environmental Protection Agency, Greenhouse gas equivalencies calculator (April 2023)*

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Things to consider

- Could save water costs
- Environmental impacts – CO2, microplastics, etc.
- Stormwater control
- Installation, maintenance, and life cycle costs

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Recommendation

In residential applications, maintain the current standard of requiring 50% of all open space to be living material. Disallow artificial turf in front yards and yards visible from the public rights of way, as well as commercial applications.

Questions?