

Landscape Ordinance Artificial Turf Follow Up Discussion

December 12, 2017

ADDISON

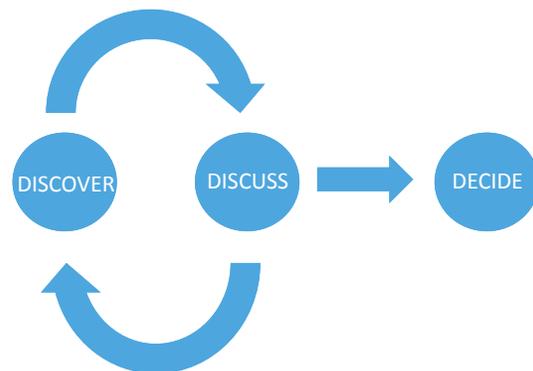
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Overview of Previous Discussion

ADDISON

Request to Allow Artificial Turf in Required Landscape Areas

- **What is the issue?** Meridian Square Homeowners Association installed artificial turf, which is not currently allowed, within their required landscape area. Artificial Turf was installed to deal with issues created from heavy shade, pets and small yards. As a follow up their HOA made a request of Council to allow the use of artificial turf within these areas.
- **Previous Discussion Point:** Staff advised Council on the purpose of the Town's landscape ordinance and offered points of consideration regarding the intent of the ordinance and the use of artificial turf.
- **Previous Discussion Point:** Staff identified that an ordinance that allows artificial turf would need to address allowable zoning, define quality and quantity parameters. Subsequently, this will require enforcement by the Town.
- **Discover:** Council directed staff to research landscape ordinances in other states that allow Artificial Turf, such as California and present this information to council.
- **Discussion Point:** This presentation will provide council with information regarding California Artificial Turf Ordinances, potential environmental impacts, aesthetics and quality control standards. It will also look at how Artificial Turf is beginning to be addressed in Texas and provide Council with discussion options regarding Artificial Turf requirements in Addison.



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Sample Ordinances - California



Numerous California cities define how artificial turf can be used in response to State Laws.

- April 1, 2015 the Governor issued an Executive Order that implemented mandatory water reductions across the state to reduce water use by 25 percent.
- Assembly Bill 349 – Bars HOA's that oversee common-interest developments from forbidding synthetic grass or turf.
- Assembly Bill 1164 – Prohibits a city or county, from enacting or enforcing any ordinance or regulation that prohibits the installation of drought tolerant landscaping, synthetic grass, or artificial turf on residential property.
- Senate Bill 88 – Allows local agencies to impose civil liability of up to \$10,000 for violations of water conservation programs.

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Sample Ordinances - California*



CITY	RESIDENTIAL	MULTI-FAMILY	MIXED-USE	COMMERCIAL	Additional
Beverly Hills	70%	70%	Not Allowed	Not Allowed	Not Allowed Within the ROW, Parkway or Within the Dripline of Heritage Trees.** Requires a buffer between property line and street and buildings.
Glendale	50%	50%	Can Not Be Visible From Streets	Not Allowed	Not Allowed in Parkways**
Lawndale	Allowed	Not Allowed	Not Allowed	Not Allowed	
Sacramento	Allowed	Allowed	Allowed	Allowed	
Simi Valley	75%	50%	50%	50%	Requires Zoning Clearance
Westlake Village	Allowed	Allowed	Not Addressed	Allowed	

* Although California municipalities are required to allow artificial turf in residential zoning, the ordinances are in place to set limits and establish quality standards.

** Parkways are excluded due to increased costs associated with repair of damaged utility lines.

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Sample Ordinances - California



Environmental Impacts

- **Sanitation** – Reports indicate Artificial Turf can have increased bacteria levels. Some products are now coated with anti-microbial agents.
- **Impact on Landfills** – The carpet is not biodegradable and will need to be replaced in 8-15 years.
- **Soil Compaction** – Installation requires compaction of subgrade.
- **Loss of Soil Dynamics** – Compacted soil and loss of organic matter will deplete healthy soil bacteria and organisms.
- **Increased Run-off** – Compacted subgrade creates an impervious surface.
- **Storm Water Pollution** – Toxins from Artificial Turf can leach into storm water. Loss of soil dynamics will prevent soil from filtering and cleaning ground water.
- **Air Quality** – A turf area of 50' x 50' lawn produces enough oxygen to meet the everyday needs of a family of four ¹.
- **Heat Gain** – Artificial turf can increase atmosphere temperature by 4° Celsius².

Because of environmental concerns many California municipalities encourage a xeriscape over an artificial lawn to reduce water consumption and apply limits to the amount of Artificial Turf allowed on a lot.

A Xeriscape is a landscape design that requires little or no irrigation and limited maintenance.

1. Maryland Agricultural Statistics Service.
2. American Meteorological Society.

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Sample Ordinances - California



Aesthetics*

Attribute	Xeriscape	Artificial Lawn
Curb Appeal	x	x
Regional Sense of Place	x	
Showcases Color & Textures	x	
Consistent Manicured Look		x
Remains Uniform		x
Seasonal Changes	x	

*Based on report produced for Glendale, CA

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California – Compiled Quality Requirements



Type

- Cut-Pile carpet.

Materials

- Blade & Backing: Lead-free polyethylene, polypropylene, vegetable based product or a blend of the three. Nylon or plastic is not allowed.
- Infill: Must be clean washed sand, silica sand, cork or zeolite. Crumb rubber is not be allowed.
- Permeability: Permeable backing with drain rate of 30" per hour.
- Warranty: Have a minimum 8-year warranty.
- Tear Grab Strength: Minimum 200 pounds.
- Tuft Bind Strength: Minimum 8 pounds.
- Flammability: Pass the pill burn test for flammability.

Appearance

- Color: Include a minimum of two shades of green blade colors and contain a tan thatch layer. Colors must mimic natural turf.
- Texture: Three-dimension ridge, spine cross-section and uneven tips.
- Length: Blade length between 1-1/2" – 2-1/2".
- Thickness: Tuft spacing of no more than 3/8" spacing between rows.



Typical Turf Installation
Image Courtesy of the Synthetic Turf Council



Typical Turf & Thatch Coloring
Image Courtesy of SynLawn

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California – Compiled Quality Requirements



Installation

- Seams: Sewn seams.
- Edges: Edges not visible.
- Base: Installed over a compacted aggregate base that allows for adequate drainage.
- Anchoring: Permanently anchored.

Maintenance

- Must be maintained in clean and attractive conditions.
- Shall not contain weeds, holes, tears, stains, discolorations, faded, seam separations, uplifted surfaces, heat degradation, depressions, odors or excessive wear.
- Damaged or worn areas must be repaired or removed and replaced in a manner that results in consistent appearance with the existing synthetic lawn.
- Be groomed periodically to prevent compacted and flattened turf.

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Comparative Cities - Addison



Landscape Ordinance

Allen
 Carrollton
 Coppell
 Frisco
 Farmers Branch
 Flower Mound
 Grapevine
 Irving
 Lewisville
 McKinney
 Plano
 Richardson
 University Park

Within required landscape space calls for either:

- the use of living plants
or
- specifically states artificial or man-made plants are not allowed.

Some of our comparative cities go a step further and do not allow artificial turf in front yards or where visible from the public Right-of-Way.

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Texas Research – Environmental



Heat Island - Comparisons of four surfaces in College Station, TX

Type of Surface	Maximum daytime surface temperature	Minimum nocturnal surface temperature
Green growing <i>Bermuda</i> turf	88°F (31 °C)	75°F (24 °C)
Dry bare soil	102°F (39 °C)	79°F (26 °C)
Brown summer-dormant <i>Bermuda</i> turf	126°F (52 °C)	81°F (27 °C)
Synthetic turf	158°F (70 °C)	84°F (29 °C)

Storm Water- Some Texas municipalities are studying whether Artificial Turf should be considered an Impervious surface. The City of Austin Water Protection Ordinance has determined Artificial Turf is impervious unless the installer can provide design information indicating how the soil is kept pervious and infiltration of storm water is ensured.

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Staff Recommendation



Staff does not recommend the modification to the Town landscape ordinance to allow the installation of Artificial Turf in the required landscape area.

- Does not meet the environmental objectives of Addison's landscape ordinance.
- Requires modifications to the landscape ordinance.
- Would require continued staff oversight.

Article VI. – Landscape Regulations
Sec. 34-201 – Purpose
 Aid in stabilizing the environment's ecological balance by contributing to the processes of air purification, oxygen regeneration, groundwater recharge, and (stormwater) runoff retardation, while at the same time aiding in noise, glare and heat abatement.

If Council chooses to allow the expanded use of Artificial Turf, staff recommends limiting the following items:

- Establish quality standards similar to example ordinances.
- Limit quantity of application to ensure a portion of the required landscape area is vegetated with live plants.
- Limit zoning location in which Artificial Turf is Allowed

Artificial Turf Ordinance- Quality



Turf Component	Allowed	Not Allowed
Blade & Backing	Lead-free polyethylene, polypropylene, vegetable-based or combination	Nylon or Plastic
Infill	Clean washed sand, silica sand, cork or zeolite	Crumb Rubber
Permeability	Permeable backing with 30" per hour or > drain rate	
Warranty	Minimum 8-year warranty	
Tear Grab Strength	Minimum 200 pounds	
Tuft Bind Strength	Minimum 8 pounds	
Flammability	Pass the pill burn test for flammability	
Appearance	Allowed	Not Allowed
Color	Include a minimum of two shades of green blade colors and contain a tan thatch color. Colors must mimic natural turf.	Colors that do not mimic natural turf.
Texture	Three-dimension ridge, spine cross-section and uneven tips	
Length	Blade between 1-1/2" – 2-1/2"	
Thickness	Tuft spacing of no more than 3/8" between rows.	
Installation	Allowed	Not Allowed
Seams	Sewn Seams	
Edges	Edges not visible	
Base	Compacted aggregate that allows for adequate drainage	
Anchoring	Permanently anchored	
Maintenance	Allowed	Not Allowed
Wear	Maintained in clean and attractive conditions	
Damage	Shall not contains weeds, holes, tears, stains, discolorations, fading, seam separations, uplifted surfaces, heat degradations, depressions, odors or excessive wear	
Damage	Damaged and worn areas must be repaired or removed and replaced in a manner that results in consistent appearance with existing synthetic lawn.	
Grooming	Be groomed periodically to prevent compacted and flattened turf.	

Subjective Items

- How are natural turf colors defined and assured?
- How is faded color determined?
- How is worn turf determined?
- How to discern between repair or replacement being required?

Points to Consider

- Should an increase in impervious surfaces impact storm water fees?
- Should there be other environmental impact fees to offset oxygen reduction and increase in storm water pollution?

Artificial Turf Ordinance - Quantity





100 -90% Artificial Turf



80-75% Artificial Turf

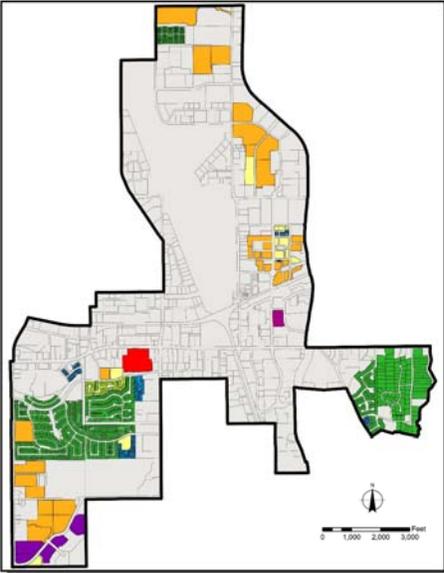


60-50% Artificial Turf

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Artificial Turf Ordinance - Location





Legend

SINGLE FAMILY RESIDENCES	APARTMENTS
SFR - VACANT LOTS/TRACTS	ADDISON GROVE
MFR - DUPLEXES	AMLI
TOWNHOUSES	VITRUVIAN DEVELOPMENT
CONDOS	

PROPERTY TYPE	SF	ACRES	SQ. MILES
SINGLE FAMILY RESIDENCES	10,951,278.00	251.41	0.39
SFR - VACANT LOTS/TRACTS	26,628.65	0.61	0.00
SFR - TOWNHOUSES	832,236.05	19.22	0.03
MFR - DUPLEXES	453,051.68	10.40	0.02
CONDOS	1,164,672.59	26.74	0.04
MFR-APARTMENTS	8,704,508.62	199.83	0.31
VITRUVIAN DEVELOPMENT	1,582,852.00	34.40	0.04
ADDISON GROVE	744,234.00	17.09	0.03
AMLI	211,456.00	4.85	0.01
Total	24,155,897.59	554.54	0.87

Definitions

- Single Family – Freestanding residential home.
- Duplex – Two single family homes that share a common wall.
- Townhome – Single-family residences built side by side and includes the land the home is on.
- Condo –Community of units, in which the individual owns the interior of the unit but not the common space.
- Apartment – Multi-family property owned and managed by a landlord.
- Live-Work Unit – Townhome type unit that includes a business work space.

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Artificial Turf - Options



OPTION 1

Not allow Artificial Turf in any front yard or within any required landscape areas.

OPTION 2

No change to current ordinance.

Single Family / Duplex zoned properties are exempt and all other zoning must meet the required landscape area objectives that call for the use of living plant material.

OPTION 3

Allow in all Single Family, Duplex , Townhome and Townhome like properties.

OPTION 4

Allow in Single Family / Duplex Zoning, plus Urban Center Townhome Zoning with HOA Oversight.

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Artificial Turf - Options



OPTION 1

Not allow Artificial Turf in any front yard or within any required landscape areas.

Pros

- Protect Town from expensive repairs as a result of utility repair and installation.
- Consistent ordinance with some of our comparative cities.
- No environmental impacts regarding heat gain, loss of soil dynamics and run off.

Cons

- Would require grandfathering in or removal of existing artificial lawns within front yards.

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Artificial Turf - Options



OPTION 2

No change to current ordinance.

Single Family / Duplex zoned properties are exempt and all other zoning must meet the required landscape area objectives that call for the use of living plant material.

Pros

- Keeps the status quo.
- Consistent ordinance with some of our comparative cities.
- No additional environmental impacts regarding heat gain, loss of soil dynamics and run off.

Cons

- Does not treat owner occupied properties equally.
- Would require the removal of non-complying Artificial Turf.

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Artificial Turf - Options



OPTION 3

Allow in all Single Family, Duplex, Townhome and Townhome like properties.

Pros

- Limits use of Artificial Turf to owner occupied properties.
- Treats all owner occupied properties equal.

Cons

- Would require enforcement & oversight by Town.
- Would require expensive repairs if located over utilities.
- Increase environmental impacts regarding heat gain, loss of soil dynamics and run off.

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Artificial Turf - Options



OPTION 4

Allow in Single Family / Duplex Zoning, plus Urban Center Townhome Zoning with HOA Oversight.

Pros

- Creates a limited-use area that only applies to the Urban Center where heavy shade, small yards and pet use is an increased issue.
- Requires HOA's to enforce and oversee.
- Allows use of Artificial Turf in a limited capacity as some of the unknown concerns are being researched.

Cons

- Would require secondary enforcement & oversight by Town of individual property owner if HOA's did not fulfill their obligations.
- Would require expensive repairs if located over utilities.

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Discussion



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