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SYNTHETIC ATHLETIC TURF FIELDS



**Park and Recreation Board
August 17, 2017**



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PURPOSE

- What is Synthetic Turf?
- Installation Cost of Synthetic Turf
- Installation Cost of Natural Turf
- Maintenance Cost Comparison of Synthetic and Natural Turf
- Advantages/Disadvantages of Synthetic and Natural Turf
- Life Cycle Cost Comparison of Synthetic and Natural Turf
- Next Steps



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WHAT IS SYNTHETIC TURF?

Synthetic Turf is an artificial turf surface prepared of synthetic fibers made to look like natural grass. It is most often used in areas for sports that were originally or are normally played on natural grass. The average lifetime expectancy for Synthetic Turf is 8 to 10 years.



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INSTALLATION COST OF SYNTHETIC TURF

- \$880,000 (**estimated**) installation for one field
 - Base prep: \$500,000
 - Materials (turf and infill etc.) (\$4.75 per sq. ft.):
\$380,000
- Other cost considerations
 - Purchase new maintenance equipment; sweeper and groomer: \$11,500 (**estimated minimum**)



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INSTALLATION COST OF NATURAL TURF

- Field renovation for one field: \$240,000 (**estimated**)
 - Field leveling and shaping
 - Irrigation and drainage adjustments
 - Laser level field surfacing
 - New turf installation
- Sand capping for high traffic: 45,000 (**suggested**)



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MAINTENANCE COST COMPARISON

NATURAL GRASS FIELD

Mowing
Fertilization
Weed Control
Top Dressing
Irrigation
Field Markings
Re-Seeding/Re-Sodding
Aerification

\$40,000 - \$60,000+ / year

SYNTHETIC TURF FIELD

Grooming
Sweeping
Power-Blowing
Periodic Decompaction
Periodic Testing

\$5,000-\$8,000 / year



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MAINTENANCE COMPARISON

NATURAL

- Not meant to be used during and/or after rain or inclement weather
- Weekly mowing
- Weekly marking for soccer and football (paint) ; daily baseball /softball depending on usage (chalk)
- Chemical applications required
- Recommended usage of grass: average 750 hours/year with rest required

SYNTHETIC

- Increased playability, broader access; can be used during and after rain
- No mowing or trimming
- One-time field marking
- No chemical applications
- Turf can be utilized 3,000 hours/year with no rest required



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SYNTHETIC TURF

ADVANTAGES

- Consistent year-round playing surface built to withstand extended-use without downtime for recovery
- Synthetic turf can be utilized around 3,000 hours/year with no rest required
- Can be used during and/or after rain or inclement weather conditions
- No mowing or trimming
- No field marking
- No chemical applications



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SYNTHETIC TURF

DISADVANTAGES

- Synthetic turf surfaces can be 10-30 degrees hotter than natural turf
- Synthetic fields do not fix CO₂ (carbon-dioxide) and release O₂ (oxygen) as do natural grass fields
- Initial cost for new synthetic turf field infrastructure
- New specialized maintenance equipment required to maintain the synthetic turf
 - Synthetic turf sweeper (range: \$7,500-\$8,500)
 - Synthetic turf groomer (range: \$4,000-\$5,000)
- Turf and Infill systems need renovating every 8-10 years (range: \$350,000-\$380,000)
- Life expectancy typically 8-10 years



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NATURAL GRASS

ADVANTAGES

- Cooler playing surface than synthetic fields
- Grass contributes to cooling the surrounding environment
- Grass assists to filter air and water pollutants
- Less injuries sustained on a properly maintained grass field



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NATURAL GRASS

DISADVANTAGES

- Grass fields are not meant to be used more than 35 to 40 hours a week
- Not playable during and/or after rain or inclement weather conditions
- Not playable while dormant (November-February)
- Requires routine maintenance: mowing, field marking, irrigation and fertilization/herbicide application
- Natural turf fields need renovating every 5 years (range: \$240,000-\$285,000)



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LIFE CYCLE COST COMPARISON

	Year								
Natural Turf	1	2	3	4	5	6	7	8	
Installation Cost	285,000								285,000
Annual Maintenance Cost	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	104,000
Total	298,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000	389,000
Synthetic Turf	1	2	3	4	5	6	7	8	
Installation Cost	880,000								880,000
Equipment Cost	11,500								11,500
Annual Maintenance Cost	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	48,000
Total	897,500	6,000	6,000	6,000	6,000	6,000	6,000	6,000	939,500



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PEER CITY COMPARISONS

Fort Worth

- Two soccer fields
- One rugby field

Austin

- One baseball field

San Antonio

- None

Houston

- None

DFW suburbs

- Euless (six softball fields); Grapevine (four softball fields); Southlake (one baseball field)



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NEXT STEPS

IDENTIFY FUNDING

- Sponsorships/partnerships
- Bond program

FIELD INVENTORY/ASSESSMENT

- Identify potential fields

PARK AND RECREATION BOARD UPDATE

- Staff recommendations



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Synthetic Athletic Turf Fields





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APPENDIX

- Installation Timeline for Synthetic Turf
- Synthetic Turf Installation Process Photos



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INSTALLATION TIMELINE FOR A SYNTHETIC TURF FIELD

- Install construction entrance/track protection along with erosion and sediment control (2 days)
- Field excavation to subgrade (5 days)
- Install perimeter concrete (5 days)
- Install field textile fabric and field under drain system (5 days)
- Install free draining base stone and finish stone (7 days)
- Off-load turf rolls and place turf (2 days)



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INSTALLATION TIMELINE FOR A SYNTHETIC TURF FIELD (cont.)

- Sew turf panels (7 days)
- Install field markings and decorative markings (7 days)
- Install infill (7 days)
- Remove construction entrance/clean-up (4 days)
- Test field (2 days)



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SYNTHETIC TURF INSTALLATION





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SYNTHETIC TURF INSTALLATION

